DOCUMENT RESUME

ED 284 056 CE 047 889

TITLE Nashville Area Employment and Training Needs. Vocational Education Exemplary Project.
INSTITUTION Nashville - Davidson County Metropolitan Public Schools, Tenn.
SPONS AGENCY Tennessee State Dept. of Education, Nashville. Div. of Vocational-Technical Education.
PUB DATE 85
NOTE 180p.; For related documents, see ED 267 189-223 and CE 047 888-890. Document contains colored print.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC08 Plus Postage.
DESCRIPTORS Community Cooperation; *Demand Occupations; Educational Improvement; *Educational Needs; *Employer Attitudes; *Employment Projections; *Entry Workers; Labor Needs; Program Improvement; Secondary Education; *Vocational Education
IDENTIFIERS *Tennessee (Nashville)

ABSTRACT

A survey involving 1,142 Nashville, Tennessee, area businesses was conducted to assess current employment interest and future labor demands for entry-level jobs. Major objectives of the project component, part of a three-pronged effort to improve vocational education, were (1) to provide for greater involvement by business and industry in analyzing the extent to which vocational programs offered in metropolitan Nashville are current, relevant, and responsive to local human power needs and (2) to use the findings of the project survey and of related efforts to improve local vocational education programs. According to the results of the survey, "service occupations" is the occupational category in which the most entry-level job openings, due to expansion and replacement, could be expected to occur between 1982 and 1985. Of the top 25 jobs out of 6,541 job titles with the most projected openings, 14 of the top jobs were within the service occupations category. Several jobs in the sales and clerical category and two job titles belonging to the crafts and kindred occupations were also part of the top 25 jobs with the most projected openings. Employers contributed numerous comments and suggestions for improving vocational programs. The occupational projections will be used with related data to form a picture of prospective supply-demand conditions. Recommendations were made to improve the vocational education programs to meet employment needs. (Author/KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED284056

NASHVILLE AREA

EMPLOYMENT AND TRAINING NEEDS

METROPOLITAN NASHVILLE PUBLIC SCHOOLS · EDUCATION FOR FREEDOM ·

CE047886

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
D Covington
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Metropolitan Public Schools
Vocational Education Exemplary Project
Nashville - Davidson County, Tennessee
Charles O. Frazier, Director

BEST COPY AVAILABLE

Metropolitan Public Schools
Nashville Davidson County, Tennessee
Charles O. Frazier, Director

Lucille C. Nabors
Assistant Superintendent
Curriculum and Instructional Services

Metropolitan Board of Public Education
Vern Denney, Chair
H. Tom Hightower, Vice-Chair

Pat Bentrup
C. Dewey Branstetter, Jr.
Charles E. Glenn

Dorothy A. Gupton
June Lambert
Isaac Northern, Jr.

Kent M. Weeks

NASHVILLE AREA
EMPLOYMENT AND TRAINING NEEDS

[illegible] Education
[illegible] Public Schools

UNITY FOR A QUALITY VOCATIONAL DELIVERY SYSTEM
IN THE METRO NASHVILLE COMMUNITY
1985

The material within was prepared under contract with the Tennessee State Department of Education, Division of Vocational Technical Education. Contractors undertaking funded projects are encouraged to express freely their professional judgment in conducting projects. However, opinions expressed may not reflect those of the funding agent, and no endorsement by that agency should be inferred.

[redacted]

ABSTRACT

Against a setting of rapid economic and employment changes, the Metropolitan Nashville Public Schools received a grant from the Tennessee Department of Education, Division of Vocational-Technical Education, to initiate a unified effort to improve vocational program quality through curriculum analysis, community involvement, and interagency cooperation. As one way to follow through with this effort, a survey involving 1,142 Nashville area businesses was conducted to assess current employment interest and future labor power demands for entry level jobs. Major objectives of the project component were: 1) to provide for greater involvement by business and industry in analyzing the extent to which vocational programs offered in Metropolitan Nashville are current, relevant, and responsive to local human power needs, and 2) to utilize the findings of the project survey and of related efforts to improve local vocational education programs.

How does Metro Nashville Public Schools need to revise its vocational programs to fit the current and projected job demands? What are the entry level jobs/job categories that will show the highest number of projected job openings and the most growth during the next few years? What jobs call for a secondary vocational education curriculum? These were some of the questions that the exemplary project staff hoped to answer by conducting the Metro Nashville/Davidson County Employment and Training Needs Survey.

According to the results of the survey, the SERVICE OCCUPATIONS is the occupational category where the most entry level job openings, due to expansion and replacement, can be expected to occur between 1982 and 1985. Of the top 25 jobs out of 651 job titles with the most projected openings, 14 of the top jobs were within the SERVICE OCCUPATIONS category. Several jobs in the SALES AND CLERICAL category and two job titles belonging to the CRAFTS AND KINDRED OCCUPATIONS were also

part of the top 25 jobs with the most projected openings. Employers contributed numerous comments and suggestions for improving vocational programs.

Occupational projections/supply-demand analysis is only one among many factors to be considered by educational officials in planning programs. Other factors that must be considered include a) program costs, b) availability of teachers, equipment, and facilities, c) student interest, d) employer hiring and training practices, e) student follow-up data, and f) employer follow-up data. The occupational projections and supply-demand analyses used should include data for the local area, the state, and the nation as a whole. In summary, occupational projections must be used with related data to form a picture of prospective supply-demand conditions.

Recommendations were made which evolved from a review of the literature as well as the results of the item responses and the comments on the Employment and Training Needs Survey. To gain special insight into the rationale for several of the recommendations, it is suggested that readers review a section entitled "Factors Expected to Impact Secondary Vocational Education" (pp. 51-64) of the Nashville Area: Employment and Training Needs Report.

TABLE OF CONTENTS

Page

LIST OF TABLES vii

INTRODUCTION 1

RELEVANT INFORMATION

New and Emerging Occupations 4
Occupational Projections 7
Limitations of Occupational Projections 10

METHODS

Respondent Population 12
Survey Instrument 15
Procedure 15
Data Analyses 17

RESULTS

Questions #1, #2, & #3
  Employment Projection Results 18

Comparisons to -
  Other Metro Nashville Area Employment Projections 27

Comparisons to -
  Employment Projections for Tennessee 30

Comparisons to -
  Employment Projections for U.S. 32

Questions #4 & #5
  Types of Jobs
  Educational & Training Requirements 34

Question # 6
  Businesses Interested in Working with Local Educational Institutions and Service Agencies 44

Additional Comments 44

CONCLUSIONS AND DISCUSSION

Survey Summary 48

Factors Expected to Impact Secondary Vocational Education 51

Recommendations 64

TABLE OF CONTENTS (Continued)

REFERENCES 76

APPENDICES

A. Survey Instrument - "Metropolitan Nashville/Davidson County Employment and Training Needs Survey" 83

B. Correspondence 89

C. Supplementary Tables
  Metropolitan Nashville/Davidson County Employment and Training Needs Survey 105

D. Tables
  Employment Projections, Other Sources 131

LIST OF TABLES

TABLE **PAGE**

1 Summary of Populations 13

2 Summary of Employers' Responses 19

3 Twenty-Five Entry Level Jobs with the Most Projected Openings, 1982-85 22

4 Twenty Entry Level Jobs with the Greatest Amount of Projected Growth Rate, 1982-85 23

5 Entry Level Jobs with the Greatest Amount of Projected Hiring Rate, 1982-85 25

6 Businesses Categorized by Standard Industrial Classification (SIC) 28

7 100 Jobs with the Most Projected Openings, 1982-85 35

8 Occupational Groups: "Hard To Fill" and/or "Require Secondary Vocational Education" 43

Appendices

Appendix C

Supplementary Tables for Metropolitan Nashville/Davidson County Employment and Training Needs Survey

Major Occupational Groups within a Broad Occupational Category

A Crafts and Kindred 106

B Operatives 107

C Service 108

D Sales and Clerical 109

Phase I

1a Crafts and Kindred 110

1b Operatives 111

LIST OF TABLES (Continued)

Appendices continued:

Major Occupational Groups within a Broad Occupational Category

Phase I continued:

1c Service 112

1d Sales and Clerical 113

Phase II

2a Crafts and Kindred 114

2b Operatives 115

2c Service 116

2d Sales and Clerical 117

Phase III

3a Crafts and Kindred 118

3b Operatives 119

3c Service 120

3d Sales and Clerical 121

Phase IV

4a Crafts and Kindred 122

4b Operatives 123

4c Service 124

4d Sales and Clerical 125

E Jobs with the Most Projected Openings, 1982-85 126

LIST OF TABLES (Continued)

Appendix D

Employment Projections, Other Sources

F Projected Employment by Board Occupational Category (Service Delivery Area 9) 132

G Thirty High-Demand Occupations (Tennessee) 133

H Forty Occupations Having the Largest Projected Employment Growth (United States) 134

I Twenty Occupations with the Highest Projected Growth Rate (United States) 135

J Twenty Occupations with the Largest Projected Rate of Decline (United States) 136

INTRODUCTION

According to futurists, there is little doubt that numerous and rapid changes will be the norm during the remaining years of the 20th century. As a result of technological changes and foreign competition, the economy is shifting from one based primarily on the production and distribution of goods to one based primarily on the exchange of information and services (Lewis & Fraser, 1984). These changes have important implications for Vocational Education. For example, as we move into a global economy, analysts report that the most important resource for American business/industry is no longer capital but human resources which will need to be well trained and able to adapt to a wide variety of challenges.

These technological and economic changes create severe difficulties in designing delivery systems that meet present labor market needs and are responsive to future employment opportunities (Orth & Russell, 1980). Changing technology can cause new jobs and skill requirements to appear within the labor market very quickly and the delivery system to develop the new skills and competencies needed must be substantially different than those taught when highly specialized occupational programs were needed to meet the needs of business and industry in an industrial society (Daggett, 1984).

Vocational Educators are actually expected to anticipate the future in order to be prepared when it arrives since new developments in technology may take several years to be factored into existing vocational education programs before full implementation is a reality. With declining enrollments and budgetary restraints becoming more prevalent, vocational educators will be under more pressure to offer programs which are cost effective and occupationally relevant. Nevertheless, those responsible for vocational education programs must make decisions based on the best available information (Lewis and Fraser, 1984).

Against this backdrop of economic and employment changes, the Metropolitan Nashville Public Schools received a grant from the Tennessee Department of Education, Division of Vocational-Technical Education, to initiate a unified effort to improve vocational program quality through curriculum analysis, community involvement, and interagency cooperation. As one way to follow through with this effort, a survey was conducted to assess current employment interest and future labor power demands.

The project targeted joint planning between education and industry with one aim being to make business and industry education's data bank for projected labor force needs. Another aim was to make current programs more responsive to student occupational pursuits and to set in place a mechanism for ongoing analysis and revision of vocational programming.

The name of the Vocational Education Exemplary Project (VEEP) of Metro Nashville Public Schools was "Unity for a Quality Vocational Delivery System in the Metro Nashville Community". Major objectives of the effort were: 1) to provide for greater involvement by business and industry in analyzing the extent to which vocational programs offered in Metropolitan Nashville are current, relevant, and responsive to local human power needs, 2) to utilize the findings of project surveys and related efforts to improve local vocational education programs, and 3) provide vital information for overall improvement in the basic skills.

During the first year of the Exemplary Project's existence, 1981-82, no comprehensive employment and training data were available for the Nashville area that included projections for individual job titles. The Tennessee Department of Employment Security, Research and Statistics Division, supplied job title projection data for the State of Tennessee, but such data were not presented by counties or by Standard

Metropolitan Statistical Areas (SMSA's). Therefore, conducting a survey by sampling the business community of the Nashville area seemed to be a reasonable and necessary activity.

Project Staff made the decision that the survey needed to reveal results concerning opportunities for entry level employees as a result of both expansion and replacement needs of businesses. Entry level jobs were defined as:

> The beginning level at which the job requires the worker to function in certain occupations which offer employment opportunities with little or no previous work experience. Entry level occupations can be non-skilled, semi-skilled or skilled depending on training requirements. Professional or managerial jobs requiring college degrees are not considered as entry level.

Too, the staff had an interest in the nature of the jobs, such as whether they were new and emerging or hard-to-fill, and were also interested in the educational and training requirements for each job title as the employers perceived them to be. In addition, the staff considered questions concerning employers' interest in working with educational agencies to be of critical importance.

How does Metro Nashville Public Schools need to revise its vocational programs to fit the current and projected job demands? What are the jobs/job categories that will show the highest number of projected job openings and the most growth during the next few years? What jobs call for a secondary vocational education curriculum? These were some of the questions that the exemplary project staff hoped to answer by conducting the Metro Nashville/Davidson County Employment and Training Needs Survey.

RELEVANT INFORMATION

Prior to the administration of the Metropolitan Nashville/Davidson County Employment and Training Needs Survey, data showed that the school system had a total pupil population of 66,727 during the 1981-82 school year. This number included the 28,927 pupils enrolled in grades 7 through 12 in 16 senior high schools (Basics Update, 1981-82). The Department of Research and Evaluation reported that 39.5% of the 1982 graduating class entered college while 10.5% entered vocational/technical programs. Of the remaining 50% of the seniors of 1982, there were 32.5% who entered the job market while 4.0% enlisted in the armed services, 5.0% were unemployed, but seeking work, 2.8% were unemployed, not seeking work; 5.5% of the seniors could not be located (Basics Update, 1982-83).

The U. S. Department of Commerce reported that the 1980 census showed a total population for Nashville/Davision County to be 477,811 and for the Nashville Standard Metropolitan Statistical Area (SMSA) to be 850,505; the total employed of the civilian labor force was found to be 229,816 and 395,579; respectively (Civilian Labor Force Occupations, 1980).

NEW AND EMERGING OCCUPATIONS

As the employment and training informational needs for appropriate planning of Metro Schools' vocational programs were being considered, a search of the literature showed that the concept of new and emerging occupations was especially relevant to vocational education since one of the primary obligations of vocational education is to prepare the nation's work force efficiently and effectively (Bienstock, 1981). One way of defining an emerging occupation is "an occupation that no one used to work at, a few people work at now, and lots of people will work at soon" (Fountain, 1982, p. 12).

A more functional definition for a new and emerging occupation seemed to be "A job that is coming into existence or an existing job evolving into one with new skills and requirements" (Maxwell & West, 1980, p. 7).

Orth and Russell (1980) stated that whenever possible, occupational areas should be probed for answers to questions about emerging jobs such as follows:

> 1. Will these occupations require completely new skills, an alteration of existing skills, or new combinations of existing skills?
>
> 2. Will the new or changing technical positions require totally new curricula or just the introduction of new courses within existing curricula? Or will the emerging employment areas require simply a revised combination of existing courses?
>
> 3. What are the probable sources of training for the new or changing jobs? In particular, how much of the training will be gained by informal, on-the-job training and by formal, in-company, union, or trade association programs?
>
> 4. Will the demand continue over time or is it likely to be a one-time employment need? (pp. 12-13)

Problems and complexities in the identification process of new and emerging occupations were stated by Maxwell and West (1980) as follows:

> 1. State and National occupational data bases do not include information on new and emerging occupations.
>
> 2. Traditional employer surveys are inadequate for identifying new and emerging occupations and in estimating demand for them.
>
> 3. Unlike in the past, conditions which give rise to new and emerging occupations can create demand for the new occupations in a very short period of time.
>
> 4. Many new and emerging occupations do not have substantial demand for them for quite some time, therefore, it is difficult to determine at what point in the emerging process vocational education programs should be implemented. (p. 9)

According to Orth and Russell (1980), collecting and reporting information on a changing phenomenon is risky and difficult. Trends in society, the economy, or legislation are also difficult to predict. Yet these factors affect occupational patterns and growth tremendously. The changes in new occupations are reflected by the fact that different sources of information have different views of the situation.

The sources of information about new and changing jobs may be more biased than those for established jobs. Since the Bureau of Labor Statistics makes occupational and industrial projections on the basis of past trend extrapolations, they cannot at present project growth for new occupations or older occupations which may change due to new technology. Therefore, the sources of information about new and changing occupations are professional association leaders, employers, and educators. These individuals may be biased. "Their judgements can be subjective, but the information they provide may be the only information available; and because of their closeness to the field, these experts can provide valuable input" (Orth & Russell, 1980, p. 18).

The following are recommended ways of identifying new and emerging occupations: (Maxwell & West, 1980)

1. Keep abreast of demographic, societal, and environmental changes.
2. Keep abreast of technological changes and advancements.
3. Keep abreast of new legislation and government funding.
4. Ask advisory committee members on a regular basis to identify current and emerging occupations.
5. Maintain liaison with local business, industry, and union representatives on a regular basis.
6. Make industrial visitations to ascertain current employment vacancies, projected replacement needs for one, three, and or five years, and the number of individuals being prepared for occupations through impact training.
7. Become actively involved, attend vocational conventions and professional associations, etc.

An overriding principal of the job market is that most jobs are filled by people who replace someone leaving an existing position. Statistics show that two out of every three job openings are filled to replace people leaving previously existing positions. The third job opens up due to growth and only a small proportion of those are in new and emerging occupations (Bienstock, 1981).

Bienstock (1981) goes on to say that we have spent a great deal of energy in this country in the last 35 to 40 years looking for the new and emerging occupations. At the same time, though, our real challenge has been improving the skills of people for the great array of jobs that already exist. New and emerging jobs should not be the major focus of our planning. If one is looking to where the jobs are going to be, look at where they are; keep an eye on the replacement market.

Identifying emerging occupations is an important activity that can highlight what is happening to the economy in general. Even more important, however, is the awareness that these occupations will not all become major employers of workers and that none of them is a major employer now. The point being made is that new and emerging occupations should not be the major focus of vocational planning (Fountain, 1982). Concentrating on emerging occupations, or even the fastest growing ones, gives only a partial picture of the jobs that will be available in the future . . . the number and kinds of workers needed will depend on the interplay of demographic, economic, social, and technological factors (Nardone, 1984).

OCCUPATIONAL PROJECTIONS -

National, State, and Local

The Bureau of Labor Statistics (BLS) develops projections of future demands for many occupations by analyzing the changing nature of the economy and the factors that cause these changes. As well as presenting information on individual occupations, the projections include an overview of employment outlook through the mid 1990's in each of 16 occupational groups. Economists at BLS have estimated the number of workers that will be employed in 1995 by occupation through the use of such factors as a) information on the demand for goods and services, b) advances in technology, c) changes in business practices, and d) occupational composition of industries.

The labor force projections are themselves based on other projections (Baxter, 1984). The Bureau of the Census prepares projections for the population as a whole, and BLS projects the labor force participation rate for 65 groups, such as young people and women over the age of 55. These rates are derived through an analysis of the actual participation of the groups from 1962 to 1981; modifications are made if change is deemed likely as in the case of women age 20 to 24, women age 45 and over, and men age 55 and over. The participation rates for the various groups are then applied to the population projections.

Job projections developed by the BLS are based on assumptions concerning possible trends through 1995 (Baxter, 1984). By varying assumptions about some 100 variables, such as growth of the labor force, output, productivity, inflation, and unemployment, the Bureau has developed three different pictures of the economy in 1995. Referred to as the low growth, moderate growth, and high growth scenarios, each provides a different 1995 employment estimate for most occupations (Nardone, 1984).

All projections presented in this section of the report come from the moderate growth scenario. This scenario is characterized by a period of recovery from the 1981-82 recession followed by stable, economic growth through the mid 1990's (Nardone, 1984). The Bureau of Labor Statistic's job projections that were provided during the Spring of 1982 for the national level indicated that the jobs with the most openings due to replacement and growth needs included a) secretaries and stenographers, b) retail sales workers, c) building custodians, d) cashiers, and e) computer service technicians (Occupational Outlook Handbook, 1982). Employment in many service occupations as well as clerical and health occupations were expected to rise during the 1980's.

According to the moderate growth projection, the civilian unemployment rate was projected to fall from 9.7% in 1982 to 6.3% by 1990 and dip to 6.0% by 1995 (Personick, 1983). Contrary to several popular reports, "the decade of the 1990's will not see the demise of America's smokestack industries" (Personick, 1983, p. 24). As the economy recovered from the 1980 to 1982 recessionary period, job gains in manufacturing were expected to account for almost 1 of 6 new jobs between 1982 and 1995. As it has in the past, most new job growth was projected to take place in service-producing industries accounting for almost 75 percent of all new jobs between 1982 and 1995. Industries such as medical care, business services, professional services, hotels, personal services, and non-profit organizations were projected to account for more than one of three new jobs over the projection span.

Data from the Tennessee Department of Employment Security (Tennessee Employment Projections, 1982) showed that the occupational grouping of "Operatives" was projected to employ the largest number of people in Tennessee (21.5% of nonagricultural employment) with clerical and crafts workers employing the 2nd and 3rd largest numbers of people (17.5% and 13.6% respectively). Crafts and kindred workers, managers and officials, and laborers were expected to have shown the most change in growth between 1976 and 1982.

In 1975, Metro Nashville Public Schools requested The Center for Vocational Education of Ohio State University to conduct surveys to determine employment needs in the Greater Nashville Area and gain perspectives of students, parents, and school personnel concerning vocational education needs and interest (Gray, Russell, Cruz, and Stahura, 1976). The purpose of the surveys was to help the school system know the individual interest and community needs since the school system was undergoing a massive expansion of vocational education programs. The 147 respondents on the "Nashville Area Employment Survey for 1976" estimated that the "Clerical" and "Hospitality industry" occupational clusters offered the most job openings in 1976. The ranks of occupations by job openings showed a) secretaries, b) retail salespersons, c) bookkeepers, d) typists, e) institutional home aides, f) cashiers, and g) janitors and sextons leading the list of estimated job openings for 1976.

LIMITATIONS OF OCCUPATIONAL PROJECTIONS

To answer the question "How valid are occupational forecasts?", Rosenthal (1983) found that occupational projections are imprecise due to imperfections in the information used to develop the projections, the various political and social factors that affect the economy over time, and the inability of individuals to make perfect analytical judgements about the interaction of the many factors that affect employment. In addition, local employment trends are often significantly different from national trends due to geographic diversities. Variances caused by sampling and response errors also distort all survey data trends and their analyses.

Some of the reasons why actual employment in a projection year differ from the projected employment include a) improved technology and production methods not foreseen at the time of projections, b) a recessionary economy, c) fluctuations in demand conditions, and d) variance in calculated productivity levels. Thus, identical correspondence between projected and actual employment would be highly unlikely to occur. Rosenthal (1983) made the point that although these discrepancies exist, they do not render projections ineffective for identifying trends in constructing the future employment picture.

To be fully effective, Rosenthal (1983) concluded that occupational projections generated at the national level must be used with related data from state and local levels to form a picture of prospective supply-demand conditions. So that individuals will be trained in occupations that offer favorable job opportunities, various projections should be analyzed and used for adjusting vocational programs.

According to projection analysts, studies conducted at a local level indicate that BLS projections are useful for relatively stable industrial structures. BLS projections are poorly suited, however, for planning for potential skill mismatches in areas of emerging occupations, such as those found in high technology fields, or for occupations experiencing sudden spurts of employment growth (Flynn, 1984). Unfortunately for vocational planners, industries that are considered high-technology today may or may not be the high-technology industries of tomorrow.

Local employer surveys are often a good tool to use to identify current skill needs, yet are relatively expensive and time consuming to conduct. Two additional problems are that employers are rarely able to project their skill requirements beyond a few months and/or employers tend to be overly optimistic in their assessments of expected skill needs (Cummings, 1984; Flynn, 1984).

"In sum, occupational projections are best able to indicate replacement needs in more traditional, relatively stable industries; they are least effective in anticipating turning points in employment, training gaps in areas of emerging skill needs, or sudden spurts in employment growth" (Flynn, 1984, p. 22). However, when employment needs change in ways different from past trends, Flynn states that having alternative means of monitoring employment needs is essential for determining program revisions; some type of local employment skills survey may be necessary.

Before programs are expanded or added to the curricula, educational planners should assess such factors as the availability of skills from other sources of labor supply, the hiring and training practices of local employers, and the economic conditions of the economy overall. According to Nardone (1984), assessing the degree of competition in many occupations is difficult. Although occupations with lengthy training and strict entry requirements can be assessed with some accuracy, for most occupations, requirements are flexible and entry is possible through several routes. In the latter cases, it is difficult to measure the potential supply of workers, and to talk about shortages and surpluses is meaningless.

METHODS

RESPONDENT POPULATION

The process of sampling the entry level employment needs of Metro Nashville and surrounding counties was implemented by categorizing the businesses to be surveyed into four types of groups. The four business populations were labeled Phase I, Phase II, Phase III, and Phase IV.

In Phase I, attempts were made to survey manufacturers in Metro Nashville and the seven surrounding counties which had 10 or more employees. The 1982 Tennessee Directory of Manufacturers was used as the source for manufacturers; the directory listed the businesses and the number employed by each business. The Tennessee Department of Employment Security provided Project Staff with a computer printout of all manufacturers listed in the Tennessee Directory of Manufacturers according to each county included in the survey population. The counties involved and the number of businesses reporting 10 or more employees were as follows: Cheatham (N=7), Davidson (N=392), Dickson (N=14), Robertson (N=23), Rutherford (N=70), Sumner (N=64), Williamson (N=35), and Wilson (N=42). As seen in Table 1, of the 647 businesses which fit the criteria for Phase I, there were 516, or 79.8%, of the survey forms completed.

The business population surveyed in Phase II was composed of the 51 largest businesses in Davidson County, as reported by the Nashville Area Chamber of Commerce, Research Department (1981). The largest businesses were described to be those employing 500 or more employees and were chosen to be surveyed because of the large number of employees and the diverse occupational areas included. There were only 2 of the 51 businesses which were not interviewed, yielding a 96.1% rate of return. One of the businesses did not participate since the owners had plans to move their corporate offices to another state within a few days after project interviewers contacted the personnel.

Table 1

SUMMARY OF POPULATIONS

Employment and Training Needs Survey

Survey conducted to assess entry level job needs in Metropolitan Nashville and surrounding counties

Business Populations	Number Selected to be Surveyed	No. Of Completed Survey Forms	Percent of Return
Phase I	647	516	79.8
Manufacturers in Nashville and surrounding counties with 10 or more employees Source: Tennessee Directory of Manufacturers			
Phase II	51	49	96.1
Largest employers in Nashville area Source: Metro Nashville Chamber of Commerce			
Phase III	530	376	70.9
Random sample (20%) of businesses Source: Nashville Business Directory			
Phase IV	786	233	29.6
Businesses related directly to Metro School's vocational program offerings Sources: Nashville Area Business Associations Nashville Business Directory Business Information Directory			
TOTALS	**2,014**	**1,174**	**58.3**
Total number of survey forms completed		**1,142 ***	**56.7**

* Thirty-two (32) businesses participated in more than one Phase. However, job title employment and projection numbers presented in later sections of this report were discounted (not repeated) for businesses participating in more than one Phase.

The other business was in the process of significantly reducing the number employed with plans to go out of business in the near future.

The survey poplulation of Phase III was a 20% random sampling of businesses listed in the Nashville Business Directory (1982), which is the official membership roster of the Nashville Area Chamber of Commerce. There were 2,819 businesses listed. The 20% sample was selected by numbering each of the businesses from one to five and choosing the fourth business of each set of five. Although 20% of 2,819 rounds off to 564 businesses, the sample population was actually 530 since some of the businesses assigned the number "4" were not located within Davidson County or the surrounding seven counties and/or were names of private citizens rather than businesses. There were 376, or 70.9%, of the survey forms completed for Phase III.

In Phase IV, 786 businesses were selected for surveying because of their direct relationship to Metro Schools vocational program offerings, as identified by Project Staff. To initiate Phase IV, business associations and/or organizations were asked by letter (see Appendix B) to send lists of the businesses that were members of their associations. The request was sent to 45 associations or agencies; 17 requested lists were received by Project Staff. Two of the remaining 45 associations sent explanations as to why their associations' members were not appropriate businesses to be surveyed in regards to the purposes of the data needed for the project. A list of the associations and agencies contacted can be found in Appendix B. In order to include types of businesses for which no lists were received from an association or agency, the names of businesses according to types of services/products provided were selected from the Nashville Business Directory (1982) and the Business Information Directory (1981). There were 233 forms completed for the Phase IV population, which yields a 58.3% rate of return.

SURVEY INSTRUMENT

To initiate the selection of a survey instrument, various survey forms used by other agencies and organizations to collect employment needs data were reviewed by Project Staff and a team of advisors. The advisors included the Third Party Evaluator of the project, the Director of Research and Evaluation, Metro Public Schools, and a Systems Analyst for Metro Public Schools. Reactions to survey items and format were also garnered from the Metro Schools Assistant Superintendent of Curriculum and Instruction and the Director of Vocational Education.

The Employment and Training Needs Survey used by the Council For Employment Needs and Training (CENT) of Kellogg Community College in Battle Creek, Michigan (1981) was agreed upon as having the most appropriate items for use by the Metro Schools Exemplary Project. The CENT survey form included job titles and occupational catagories that occur most frequently on national projections. Too, the questions presented on the form seemed relavent to the informational needs of Metro Schools Vocational Education Division. Permission from CENT was requested and granted to use their basic items and format for the Metro Schools VEEP Survey form. With only minor revisions and additions needed, the four page CENT Survey Form was printed with carbon reproduction possibilities and dimensions of 11 by 19 inches. A reduced copy of the Metropolitan Nashville/Davidson County Employment and Training Needs Survey form is found in Appendix A of this report.

PROCEDURE

Personnel of businesses in Phases I, II, and III were interviewed by Metro Schools guidance counselors, vocational education co-op instructors, and Project Staff. Special workshops were conducted by Project Staff during the Summer of 1982 for the purposes of training the interviewers to approach the business personnel in a professional manner and to minimize variances in interviewing and reporting techniques. As expected, interviewers had difficulty scheduling a time when some business personnel could be interviewed. Several business personnel declined to be interviewed because of 1) lack of time, 2) discomfort about sharing information concerning the business, 3) plans to go out of business in the near future, 4) etc.

Project Staff planned to gather all data from the Phase IV population by mailing the survey to the selected businesses. The 786 businesses identified as participants for Phase IV were sent a packet of information which included the survey form, a letter of explanation, and a list of definitions related to the survey form (see Appendix B). The packet was addressed to whomever seemed to be most appropriate to complete the form, such as the owner or personnel manager. However, the number of forms returned by mail for Phase IV was quite low (N=69), although follow-up letters were sent and telephone contacts were made. Therefore, 223 of the businesses with large numbers of employees, multiple divisions, and/or multiple georgraphic branches were assigned to be interviewed which resulted into 164 additional completed forms. The final rate of return for Phase IV was 29.6%.

The interviewing process for Phases I, II, and III began during the Summer of 1982 and the mailings for Phase IV were conducted during August and September, 1982. Follow-up activities to gather information which was missing on some survey forms were completed in February, 1983.

As seen on Table 1, Project Staff identified 2,014 businesses to be surveyed. There were 1,142 survey forms which were completed by the trained interviewers, Project Staff, or business employers (56.7% rate of return). However, since 32 of the businesses were randomly or by definition selected to be included in more than one of the four Phases to be surveyed, it can be stated that 1,174 survey forms were returned, yielding a total rate of return of 58.3%.

DATA ANALYSES

It was a consensus of opinion of both Project Staff and advisors that a descriptive rather than statistical reporting of the results would be most relevent to all concerned users of the data. As mentioned previously, the foci of this component of the Vocational Education Exemplary Project were to determine 1) what occupational categories and job titles ranked highest in terms of trends of projected job vacancies and 2) what training was required for what job titles according to the employers surveyed. Frequencies, percentages, and averages were the methods chosen by Project Staff to present the results.

In addition to sampling limitations and the fact that the survey was conducted during a recessionary year (1982), the reported projections are also subject to other biases and to nonsampling errors. Nonsampling errors may come from coding mistakes, processing errors, questionnaire design limitations, incomplete responses, computer and computational errors, etc.

RESULTS

Users of these results need to remain aware that numbers and totals do not reflect 100%, or even a majority, of the Metro Nashville community's current employment or projected job needs. Nevertheless, perhaps the information can be useful in identifying trends in employment needs and training. Later in this section of the report, the results of the Vocational Education Exemplary Project (VEEP) Employment and Training Needs Survey will be compared with local, state, and national findings reported by other sources.

QUESTIONS #1, #2, & #3:

Employment Projection Results

The 1980 census results (U. S. Department of Commerce) showed that the total employed (16 years and older) in Davidson County and the surrounding counties amounted to 395,579.. According to the Tennessee Department of Employment Security (November, 1983), there were an estimated 367,500 non-agricultural employees in the greater Nashville area in November, 1982. In comparison, the VEEP Staff successfully surveyed businesses employing 132,736 in 1982 in Nashville and surrounding counties (See Table 2). The Project results are 33.6% of the 1980 census results and 36.1% of the Employment Security estimations for 1982. Based on these employment comparisons, perhaps the actual number of projected openings reported as results of the Project Survey (N=23,076, involving 651 job titles) can be speculated to be approximately one-third of the total number of projected openings. However, caution is repeated to regard this speculation with skepticism.

Table 2 shows that the largest number of job openings are projected to be in the occupational category called SERVICE OCCUPATIONS with 39.9% of the total openings. Within the SERVICE OCCUPATIONS, Food Service Workers are by far the largest group,

Figure 1

EMPLOYERS' PROJECTED EXPANSION AND REPLACEMENT JOB NEEDS

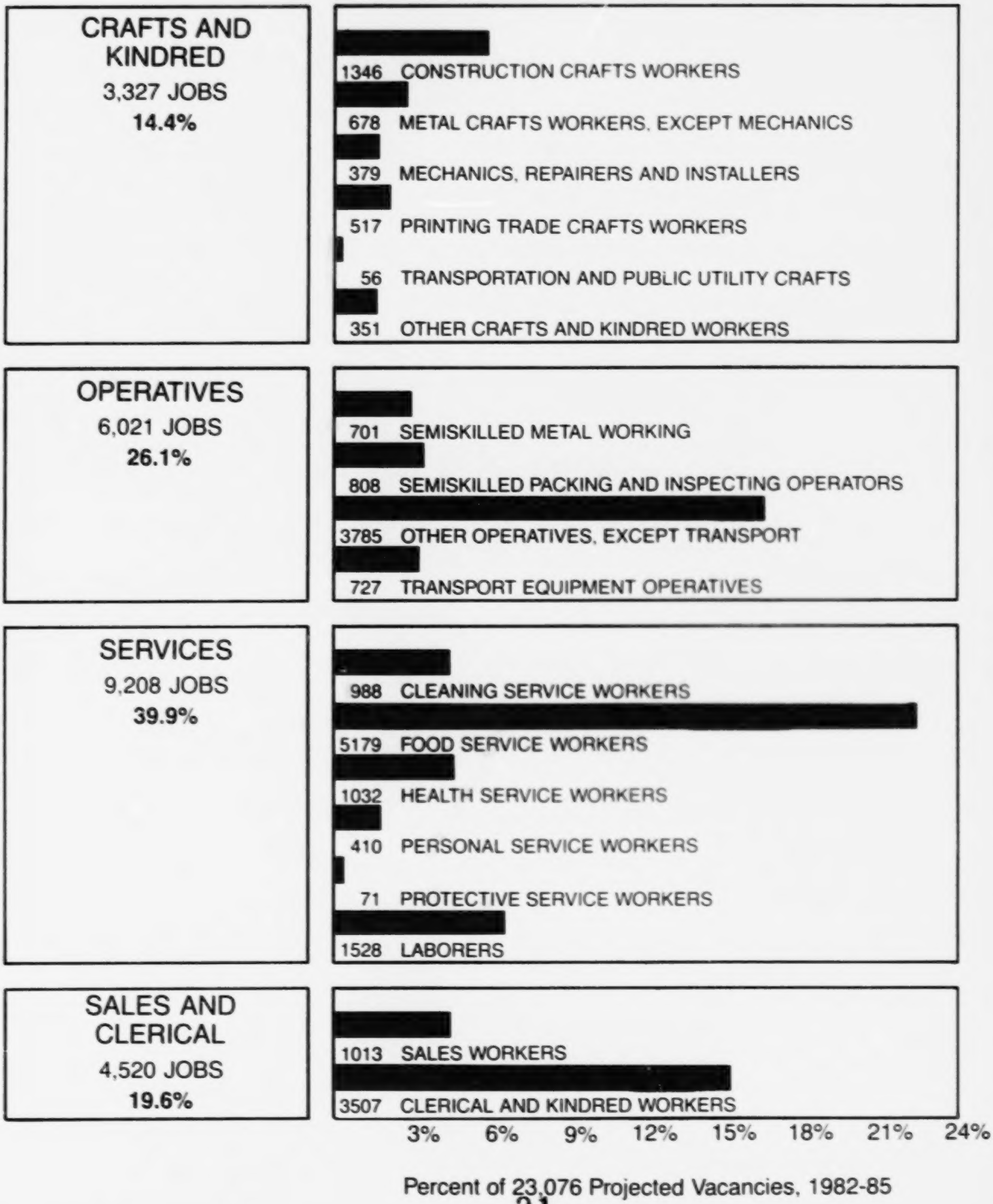

Table 2

SUMMARY OF EMPLOYERS' RESPONSES

Employment and Training Needs Survey

Survey conducted through interviews and mailings involving 1,142 businesses in Metropolitan Nashville and surrounding counties.

Data gathered to assess entry level job employment and training needs

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18)	Number Employed[a] 1982	Expansion & Replacement Needs through[a] 1985*		Hiring Rate**
CRAFTS AND KINDRED OCCUPATIONS				
1) Construction Crafts Workers	4,538	1,346	(5.8)	29.7%
2) Metal Crafts Workers, Except Mechanics	3,141	678	(2.9)	21.6%
3) Mechanics, Repairers & Installers	4,097	379	(1.6)	9.3%
4) Printing Trade Crafts Workers	3,868	517	(2.2)	13.4%
5) Transportation & Public Utility Crafts	921	56	(0.2)	6.1%
6) Other Crafts & Kindred Workers	2,131	351	(1.5)	16.5%
TOTALS	18,696	3,327	(14.4)	17.8%
OPERATIVES OCCUPATIONS				
7) Semiskilled Metal Working	4,419	701	(3.0)	15.9%
8) Semiskilled Packing & Inspecting Operators	3,299	808	(3.5)	24.5%
9) Other Operatives, Except Transport	15,685	3,785	(16.4)	24.1%
10) Transport Equipment Operatives	4,583	727	(3.2)	15.9%
TOTALS	27,986	6,021	(26.1)	21.5%
SERVICE OCCUPATIONS				
11) Cleaning Service Workers	5,113	988	(4.3)	19.3%
12) Food Service Workers	10,731	5,179	(22.4)	48.3%
13) Health Service Workers	9,646	1,032	(4.5)	10.7%
14) Personal Service Workers	1,924	410	(1.8)	21.3%
15) Protective Service Workers	8,616	71	(0.3)	0.8%
16) Laborers	8,197	1,528	(6.6)	18.6%
TOTALS	44,227	9,208	(39.9)	20.8%
SALES AND CLERICAL OCCUPATIONS				
17) Sales Workers	5,523	1,013	(4.4)	18.3%
18) Clerical & Kindred Workers	36,304	3,507	(15.2)	9.7%
TOTALS	41,827	4,520	(19.6)	10.8%
GRAND TOTALS	132,736	23,076	(100.0)	17.4%

[a] Actual numbers reported or projected by 1,142 businessess

* Numbers in parentheses represent percent of GRAND TOTALS Employment Needs (23,076) rounded to nearest tenth

** Projected expansion and replacement needs compared to number employed in 1982 making up 22.4% of all job openings found on the survey. OPPERATIVES OCCUPATIONS (26.1%) comprise the next largest number of employees needed from 1982 to 1985 in one of the four major job categories. An occupational group called Other Operatives, Except Transport make up the bulk of the OPERATIVES OCCUPATIONS needs (16.4%). This occupational group includes such job titles as "Assemblers", "Sewing machine operatives", "Painters of manufactured articles", "Garage workers and gas station attendants", etc. The SALES AND CLERICAL OCCUPATIONS amounts to 19.6% of the projected openings for 1982 to 1985 and includes the third largest occupational group--Clerical and Kindred Workers (15.2%). The fourth occupational category, CRAFTS AND KINDRED OCCUPATIONS, make up 14.4% of the number of projected openings with Construction Crafts Workers being the largest occupational group within the category (5.8%).

Within the four major occupational categories, the top 5 of the 18 major occupational groups (in terms of projected openings) are: 1. Food Service Workers - 22.4%, 2. Other Operatives, Except Transport - 16.4%, 3. Clerical and Kindred Workers - 15.2%, 4. Laborers - 6.6%, and 5. Construction Crafts Workers - 5.8%. Tables A through D in Appendix C present the results for Questions #1 through #3 on the survey according to the 18 occupational groups for the 1,142 businesses, and Tables 1a through 4d present the results for the four sub-populations by Phases.

Indications are that the largest changes in hiring will occur in the occupational category OPERATIVES (21.5%) and SERVICE OCCUPATIONS (20.8%). "Hiring Rate", as seen in Table 2, was assigned by Project Staff as the term which denotes the total of the projected expansion and replacement numbers compared to the number employed in 1982. Food Service Workers (48.3%) has a strong lead as the occupational group showing the greatest "Hiring Rate" with Construction Craft Workers (29.7%), Semiskilled

Packing & Inspecting Operators (24.5%), and Other Operatives, Except Transport (24.1%) being 2nd, 3rd, and 4th, respectively, in hiring expectations.

When the outcomes of the survey were reviewed according to the four Phases, as described in the methods section of this report, findings were that Phase II businesses employed almost 60% of the total number of employees reported in 1982. However, the same businesses (largest businesses-500 or more employees) projected only 31% of the total number of employees needed by 1985. Perhaps these large businesses were more conservative in their estimates of their future employee needs based on their opportunities to observe changes in employment, historically, of large numbers of employees.

The 25 job titles showing the most projected openings between 1982-85 can be observed in Table 3. Job titles with at least 300 or more job openings emerge for 10 of the 18 occupational groups. The 8 occupational groups not included are the following: Metal Crafts Workers, except Mechanics, Mechanics, Repairers, and Installers, Printing Trade Crafts Workers, Transportation and Public Utility Crafts, Other Crafts and Kindred Workers, Semi-Skilled Metal Workers, Personal Service Workers, and Protective Service Workers. Job titles with at least 300 or more job openings appear within each of the four occupational categories, with the largest number of job titles appearing, as expected, within the SERVICE OCCUPATIONS (14 job titles).

Table E, found in Appendix C, is an expansion of Table 3 so that the top 100 of the 651 entry level job titles with the most projected openings from 1982 to 1985 are presented. In addition, the job titles are presented according to the 4 broad occupational categories and are ranked within each of the 18 occupational groups. The job titles with the highest "Growth Rate" and "Hiring Rate" are indicated by an asterisk (*).

As seen in Table 4, the 20 entry level jobs with the greatest amount of "Growth Rate" between 1982-85, which also have employment needs of more than 30 employees

Table 3

METROPOLITAN NASHVILLE PUBLIC SCHOOLS
Vocational Education Exemplary Project

EMPLOYMENT AND TRAINING NEEDS SURVEY

TWENTY-FIVE ENTRY LEVEL JOBS WITH THE MOST PROJECTED OPENINGS, 1982-85
Job titles with at least 300 or more job openings

Job Titles	Number Employed* 1982	Openings Due to Expansion*	Openings Due to Replacement*	**Total Openings* 1982-85**
Assemblers	5,683	1,365	377	**1,702**
Waiters/Waitresses, Assistants	2,248	409	969	**1,378**
Food Counter & Fountain Workers	1,701	413	534	**947**
Other Food Service Workers, Except Private	1,511	228	511	**739**
Sales Clerks & Sales Workers	4,486	327	378	**705**
Sewing Machine Operatives	1,214	11	670	**681**
Other Clerical Workers	3,095	123	554	**677**
Secretaries & Stenographers	6,988	174	400	**574**
Nursing Aides, Orderlies & Attendants	2,491	81	456	**537**
Other Laborers	1,656	262	222	**484**
Dishwashers	627	43	438	**481**
Building Interior Cleaners, Other	1,480	45	434	**479**
Electricians	1,047	344	134	**478**
Waiters/Waitresses	1,099	74	395	**469**
Stock Handlers	1,325	170	281	**451**
Non-Management/Fast Service Restaurant Workers	820	65	563	**628**
Cooks/Chefs, Except Private Household	1,556	60	354	**414**
Construction Laborers, Other	1,656	172	220	**392**
Carpenters	812	271	120	**391**
Aircraft Assemblers	700	350	0	**350**
Cashiers	2,473	210	134	**344**
Truck Drivers	1,604	119	212	**331**
Janitors & Sextons	1,803	51	263	**314**
Packers & Wrappers, Except Meat & Produce	1,605	187	123	**310**
Licensed Practical Nurses	2,189	30	274	**304**

* Actual numbers reported or projected by 1,142 businesses

Table 4

METROPOLITAN NASHVILLE PUBLIC SCHOOLS
Vocational Education Exemplary Project

EMPLOYMENT AND TRAINING NEEDS SURVEY

TWENTY ENTRY LEVEL JOBS WITH THE GREATEST AMOUNT OF PROJECTED GROWTH RATE, 1982-85

Job titles with at least 30 or more employees needed due to projected expansion

Job Titles	Number Employed* 1982	Estimated Employment Needs through 1985 Due to Expansion*	**Growth Rate** 1982-85**
Press Operators (Metal Crafts)	34	102	**300%**
Architectural Draftspersons	60	70	**117%**
In-Plant Production Workers	115	63	**55%**
Aircraft Assemblers	700	350	**50%**
Other Semiskilled Packing & Inspecting Operators	483	180	**37%**
Carpenters	812	271	**33%**
Electricians	1,047	344	**33%**
Insurance Agents, Brokers & Related	296	96	**32%**
Assemblers	5,683	1,365	**24%**
Food Counter & Fountain Workers	1,701	413	**24%**
Real Estate Agents & Brokers	168	37	**22%**
Drill Press Operators	315	67	**21%**
Painters, Manufactured Articles	288	61	**21%**
Tool & Die Makers	474	90	**19%**
Hairdressers & Cosmetologists	310	60	**19%**
Waiters/Waitresses, Assistants	2,248	409	**18%**
Electronic Assemblers	488	84	**17%**
Checkers, Examiners, & Related (Mfg.)	996	160	**16%**
Cutting Operatives, Other	498	80	**16%**
Other Laborers	1,656	262	**16%**

* Actual numbers reported or projected by 1,142 businesses

** Growth rate = Projected expansion compared to number employed in 1982
Average growth rate for survey = 7.6%

due to projected expansion, have a "Growth Rate" of 16% or higher. The term "Growth Rate" was the term adopted by Project Staff to represent projected expansion, 1982-85, compared to number employed in 1982. The average growth rate for all 651 job titles equaled 7.6%.

The entry level jobs with the greatest amount of projected change in hiring can be seen in Table 5. No job titles are included in Table 5 which do not have at least 60 or more employees needed by 1985. The average "Hiring Rate" for the 651 job titles is 17.4%. The jobs with the greatest amount of change in the "Hiring Rate" have at least a 43% rate of hiring.

Of interest is the fact that 20, or 19%, of the top 100 jobs with the most projected needs are not listed on the survey form that was completed by the employers (see survey form in Appendix A). Some of these 20 jobs may be somewhat unique to the Nashville area and some of the results may be a product of limited sampling and/or special labeling of jobs. For example, 9 of the 20 job titles that are not on the survey were reported by only one business. Seven other job titles not on the survey were reported by 6 or less businesses. The remaining 4 of the 20 job titles which emerged without the aid of the survey form were reported by 13 or more businesses:

Binders (printing trade)
Sewing machine operatives
Accounting clerks
Desk clerks

Conversly, the job titles on the survey form which do not fall within the top 100 job titles, in terms of number of projected employment needs, amount to 35. These omissions may be due to the same reasons given for extra job titles appearing as described above—uniqueness of employment in the Nashville area, special labeling of job titles, limited sampling, etc. The 35 job titles (29% of the 120 job titles) not appearing

Table 5

METROPOLITAN NASHVILLE PUBLIC SCHOOLS
Vocational Education Exemplary Project

EMPLOYMENT AND TRAINING NEEDS SURVEY

ENTRY LEVEL JOBS WITH THE GREATEST AMOUNT OF PROJECTED HIRING RATE, 1982-85

Job titles with at least 60 or more employees needed due to expansion and replacement

Job Titles	Number Employed* 1982	Projected Employment Needs 1982-1985 Expansion*	Replacement*	Total Openings*	**Hiring Rate****
Press Operators (Metal Craft)	34	102	0	102	**300%**
Telephone Sales Workers	49	1	75	76	**155%**
Architectural Draftspersons	60	70	10	80	**133%**
Dishwashers	627	43	438	481	**77%**
Bank Tellers	289	5	201	206	**71%**
Non-Management/Fast Service Restaurant Workers	820	65	563	628	**69%**
Housekeepers, except Private Household	348	12	203	215	**62%**
Other Semiskilled Packing & Inspecting Operators	483	180	117	297	**62%**
Waiters/Waitresses Assistants	2,248	409	969	1,378	**61%**
Food Counter & Fountain Workers	1,701	413	534	947	**56%**
Sewing Machine Operatives	1,214	11	670	681	**56%**
In-Plant Production Workers	115	63	0	63	**55%**
Aircraft Assemblers	700	350	0	350	**50%**
Other Food Service Workers, except Private	1,511	228	511	739	**49%**
Carpenters	812	271	120	391	**48%**
Electricians	1,047	344	134	478	**46%**
Waiters/Waitresses	1,099	74	395	469	**43%**

* Actual numbers reported or projected by 1,142 businesses
"Total Openings" reflect projected number to be hired between 1982-85, not the total number expected to be employed in 1985

** Hiring rate = Projected expansion and replacement compared to number employed in 1982
Average hiring rate for survey = 17.4%

on the VEEP surveys top 100 job titles list with the most projected openings are listed below:

Bulldozer operators
Brick masons/stone masons
Molders, metal
Automobile body repairs
Household appliance mechanics
Photographers
Other transportation & utility workers
Stationary engineers
Sound/recording technicians
Furnace tenders, smelters, & pourers
Lathe & milling machine operatives
Fillers, Polishers, Sanders & Buffers
Meat Cutters & Butchers, except Manufacturing
Bus Drivers
Railroad Break Operators & Couplers
Other Transport Equipment Operatives
Private Household Cleaners and Servants
Health Aides, except Nursing
Barbers
School Monitors
Recreation & Amusement Attendants
Other Personal Service Workers
Fire Fighters
Police and Detectives
Other Protective Service Workers
Farm Laborers
Gardeners & Grounds Keepers, except Farm
Vehicle Washers & Equipment Cleaners
Estimators & Investigators
Expeditors & Production Controllers
Insurance Adjustors & Examiners
Library Attendants & Assistants
Postal Clerks
Medical Secretaries
Teacher Aides, except School Monitors

The 651 job titles and their respective number of projected openings are not presented in this report by the Standard Industrial Classification number (SIC) since each of the 1,142 businesses completing the survey form were identified (before processing the data) according to their major product or service, but the job titles were not assigned an SIC number. Therefore, a compilation of the job titles according to an SIC number would give distorted information if reported since various types of jobs were often associated with each business. For example, the job titles and projections reported by a business might include "Assemblers", "Clerical workers", "Custodians", etc., but a computer output would yield all the job titles and projections under the same SIC number. Table 6 shows the breakdown of the 1,142 businesses (not job titles) by the SIC numbers.

COMPARISONS TO -

Other Metro Nashville Area Employment Projections

The Tennessee Department of Employment Security, Research and Statistics Division, presented numerous data on labor market information in the Annual Planning Information publication for 1985. The projected employment for 1990 was presented in eight broad occupational categories. The data for Nashville/Davidson County (Service Area #9) showed that CLERICAL WORKERS and SERVICE WORKERS ranked first and second as categories that are expected to have the greatest number employed in 1990 that involve entry level jobs. These categories also showed the greatest percent of projected change in employment between 1984 and 1990. OPERATIVES and CRAFTS AND KINDRED WORKERS are projected to show the next largest number employed, with SALES WORKERS and LABORERS, EXCEPT FARM being the occupational categories expected to have the fewest number of employees which concern entry level job seekers. (Information concerning PROFESSIONAL, TECHNICAL, & KINDRED and MANAGERS & OFFICIALS is not presented in this report due to the fact that these two occupational categories do not involve entry level jobs.)

It is not possible to compare the Employment Security results with the VEEP Survey results, category to category, since there were only four occupational categories identified by the VEEP staff whereas there were eight categories clustered in the Employment Security Projections. However, the general trends for the two sets of data were similar. Table F has been copied from the 1985 Annual Planning Information publication showing the data presented above and can be found in Appendix D.

Table 6

BUSINESSES CATEGORIZED BY STANDARD INDUSTRIAL CLASSIFICATION (SIC)

Employment and Training Needs Survey

Businesses		Total
Agriculture, Forestry & Fisheries		
01		2
Mining		
10		3
Construction		
15		61
Manufacturing		
20		510
Transportation & Public Utilities		
40		37
Wholesale Trade		
50		100
Retail Trade		
52		104
Finance, Insurance & Real Estate		
60		90
Services		
70		232
Public Administration		
91		3
Non-classifiable		
99		0
	GRAND TOTAL	1,142

When comparing the VEEP Survey results with the Employment Security estimations, it should be noted that the Tennessee Department of Employment Security and the Bureau of Labor Statistics (to be discussed below) use the term "Percent Change" in a similar manner as the VEEP staff uses the term "Growth Rate" (projected expansion or change compared to previous employment). However, the total number projected to be employed for each job title or category is not presented on the VEEP table. This is partially due to the fact that it is possible some employers may have plans to delete positions for certain job titles, but that question was not asked on the VEEP Survey; only expansion and replacement projections were requested and no further attempts can be validly made to develop employment estimations by Project Staff. Of course, expansion and replacement sums cannot be added to the 1982 employment data in an attempt to project the total number employed in 1985 since replacement hiring cannot be considered as an addition to the 1982 employment figure.

The Tennessee Department of Employment Security, Research and Statistics Division, shared draft copies of the Total Employment and Job Openings by Occupation for 1984-1990 for Nashville/Davidson County with Project Staff. These data have been useful for comparisons of certain job titles as needed by the Metro School System. However, a comprehensive comparison of the VEEP Survey results with the Employment Security data for each job title is not presented in these results since a copy of the Employment Security publication was received by Project Staff too recently to analyze and include in the VEEP report.

A needs assessment of employment demands/interests for Nashville/Davidson County that was conducted for Metropolitan Public Schools by the National Center for Research in Vocational Education (Grey, Russell, Cruz, and Stahura, 1976) found that the types of occupations which ranked highest according to number of job openings for 1976 employment needs were very similar to those ranking at the top on the VEEP Survey for 1982-85. The following 12 of the top 25 job titles on the National Needs Assessment Survey (88 or more job openings) were also within the top 25 list of the VEEP Survey (300 or more job openings): 1. Secretaries, 2. Retail Salespersons, 3. Cashiers, 4. Janitors & sextons, 5. Sewers & stichers, etc., 6. Waiters, waitresses, 7. Nurse aides, orderlies, 8. Cooks, chefs, 9. Truck drivers, 10. Practical nurses, 11. Carpenters, and 12. Electricians.

COMPARISONS TO -

Employment Projections for Tennessee

Statewide employment projections for Tennessee, 1984-1990, were published in the Spring of 1984 (Tennessee Employment Projections, 1984). The estimated employment and projected job needs numbers were derived through the efforts of the U.S. Department of Labor, which developed the Occupational Employment Statistics (OES) Program. "The OES Program is a Federal-State Cooperative Effort involving The Employment and Training Administration, The Bureau of Labor Statistics, and State Employment Security agencies" (p. 1-1).

The estimates and projections were derived by way of analyses of many factors related to employment, including certain assumptions about economic conditions (Tennessee Employment Projections, 1984). "Because of the limitations inherent in any set of occupational projections, it is important to emphasize that the figures in the tables should be viewed as indicators of relative magnitude and probable direction rather than as exact estimates of occupational demand" (p. 1-1).

Data for the State of Tennessee showed that the top 30 high demand occupations (3,000 or more openings) during 1984-1990 included the following 12 of the top 25 high demand occupations found on the VEEP Survey: 1. Sales clerks, 2. Secretaries, 3. Janitors, porters, and sextons, 4. Nurses aides/orderlies, 5. General clerks, office,

6. Cashiers, 7. Food preparation and service workers—fast food, 8. Waiters or waitresses, 9.. Licensed practical nurses, 10. Carpenters, 11. Truck drivers, and 12. Accounting clerks. An additional 10 of the high demand jobs in Tennessee appeared on the VEEP's list of top 100 jobs. The remaining 7 of Tennessee's top 30 high demand occupations were either not included as an occupational type in the conducting of the VEEP survey (e.g., farmers), were not entry level jobs (e.g., elementary school teachers), or did not appear as a high demand occupation (e.g., sales representatives; store managers) on the VEEP survey results. Further information regarding the top Tennessee jobs is presented in Appendix D, Table G.

Information concerning 30 rapidly expanding occupations (occupations with high growth rate, not necessarily high demand jobs) in Tennessee that will have at least 1,000 employed by 1990 were presented in the Employment Security publication. However, only three job titles—"Waiters' assistants", "Machine assemblers", and "Food service workers"—coincided with job titles that fell into the top 15 with the greatest amount of growth rate for the VEEP survey results.

In the above comparisons, it is necessary to keep in mind that for both similarities and differences found, consideration has to be given to the fact that results for a local survey were being compared to data compiled for the state level. Some trends should be similar for both sources' results but differences should also be expected. Too, the local VEEP Survey covered the years 1982-1985 whereas the state estimates and projections pertained to 1984-1990. Of course, the differences in methodology can certainly be expected to result in significant differences in some findings. For example, researchers have found that when employers are asked to project their employment needs, as occurred on the VEEP Survey, the employers tend to present a much more positive picture, especially in terms of growth, than is found to be true when actual employment is compared periodically (Cummings, 1984; Flynn, 1984).

The results of the VEEP Survey were not consistent with the opinions expressed by the business and industrial leaders who were members of the Job Skills Task Force formed by Governor Alexander (Meeting Future Job Skill Requirements in Tennessee, 1982). Almost all of the 26 new or rapidly expanding job opportunities identified by the Job Skills Task Force were closely involved with technological job titles. Too, the occupations and job skills projected to decline in importance by 1990 by the Task Force were included in at least the top 100 job titles with the most projected openings by 1985 on the VEEP Survey data.

COMPARISONS TO-

Employment Projections For U. S.

At the national level, projections developed by the Bureau of Labor Statistics (BLS) showed that 40 occupations will account for about half of all new jobs between 1982-1995 (Hecker, 1983; Nardone, 1984; Personick, 1983). Of these 40 occupations which have the largest projected employment growth, 16 of the same or similar job titles appear on the list of top 25 jobs with the most projected openings of the VEEP Survey results. An additional 11 of the 40 jobs appear on the top 100 top jobs of the VEEP Survey. There were 7 jobs on the BLS top 40 list which were not entry level jobs. The 6 remaining jobs of the top 40 list that do not appear on the VEEP Survey results were "Technical sales representative", "Accountant and audtior", "Supervisor of blue collar workers", "Store manager", "Electrical and electronics technician", and "Non-technical sales representative". It is possible that some of the VEEP job titles of the top 25 or 100 jobs with the most projected openings include some of these remaining 6 BLS job titles but were labeled or categorized differently. Lists of the BLS job titles with the largest projected employment growth and the highest projected growth rate appear in the appendices of this report, along with 20 occupations that were found to have the largest projected rate of decline (see Tables H, I, & J in Appendix D).

Six job titles that are included in the VEEP's top 25 entry level jobs with the most projected openings that did not appear on the BLS top 40 list are as follows: "Assemblers", "Sewing machine operatives", "Stock handlers", "Construction laborers (other)", "Aircraft assemblers", and "Packers and wrappers (except meat and produce)". To be noted is the fact that "Aircraft structure assemblers" is 1 of the 20 occupations listed on the BLS's list of jobs with the largest projected rate of decline. As mentioned earlier, this striking difference in survey results may be a unique factor of the Nashville employment patterns in comparison to other areas of the country, but since the 350 projected openings for aircraft assemblers are a result of only one business in the Nashville community, Metro Schools Vocational Department should do further study in this area before any program revisions are considered.

An analysis of the growth rates for the survey results conducted by the VEEP and the findings by the BLS for the same period of time (1982) show that the local employers' projections for expansion were much more optimistic than the BLS estimates indicate will occur based on the 1982 economy and past trends. Speculations on the reasons for these discrepancies have been addressed in previous paragraphs of this report and will not be discussed again at this point (Cummings, 1984; Flynn, 1984).

Generally, the results of the Bureau of Labor Statistics parallel the projections of the VEEP. For example, SERVICE PRODUCING INDUSTRIES are projected to account for almost 75% of all new jobs between 1982 and 1995 (Personick, 1983). Also, the BLS projects faster than average employment growth among "Food and Beverage Preparation" service occupations (Nardone, 1984). Personick (1983) further reports that a growth in "Construction Occupations" (as projected by both the VEEP and BLS) will occur because of the pent-up demand following the 1982 recession and the lowering of interest rates. Consistent with the Bureau of Labor Statistics' projections, the VEEP results reveal relatively few job openings due to the rapid growth in high-technology industries (Riche, Hecker, & Burgan, 1984).

QUESTIONS #4 & #5:

Types of Jobs

Educational & Training Requirements

Additional information gathered from the survey which is related to the top 100 jobs with the most projected openings can be found in Table 7. For example, the number of businesses which reported each of the job titles is reported as well as the results of Question #4 which asked employers to note whether jobs were "Hard to Fill", were a "High turnover job", or were a "New, emerging job". Of course, the major interest in these questions has to do with the individual job titles, but it can be noted on the last page of Table 7 that 12% of the jobs are considered to be "Hard to fill", 8% are "High turnover jobs", and 3% are seen as "New, emerging jobs". The results of the data indicate that there are virtually no "New, emerging jobs" (Average = 3%) in the top 100 job titles except under the "Other health workers" job title where 18% of the reporting businesses indicated a "New, emerging job". Some "New, emerging" health occupations are reportedly emerging in the Nashville area, but employers did not identify these "Other Health Workers" by a specific job title.

Of special interest to Metropolitan Nashville Public Schools is the finding resulting from Question #5 that 25% of the top 100 job titles were said by the employers to "Require a secondary vocational curriculum". More specifically, 40 of the top 100 jobs were reported by more than 25% of the employers to "Require a secondary vocational curriculum" (noted by "+" symbol on Table 7). In addition, 4 of the top 100 job titles were reported by more than 50% of the employers to "Require a secondary vocational curriculum" ("++" symbol on Table 7).

Table 7

METROPOLITAN NASHVILLE PUBLIC SCHOOLS
Vocational Education Exemplary Project

EMPLOYMENT AND TRAINING NEEDS SURVEY

100 JOBS WITH THE MOST PROJECTED OPENINGS, 1982-85

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS 4. Is this a: (check all which apply) Hard to fill job?	High turnover job?	New emerging job?	5. Educational and Training Requirements for entry level (check all which apply) No diploma needed	HS diploma/ GED	Vocational curr. (9-12)	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
CRAFTS AND KINDRED OCCUPATIONS														
1) Construction Crafts Workers														
Electricians	478	33%*	46%**	99	24%	2%	5%	20%	46%	29% +	19%	8%	31%	44%
Carpenters	391	33%*	48%**	88	17%	7%	5%	39%	31%	24%	10%	1%	24%	50%
Other Construction Craft Workers	121	13%	22%	35	20%	14%	11%	69%	14%	14%	3%	3%	23%	63%
Painters, Construction and Maintenance	66	12%	20%	78	14%	5%	4%	47%	23%	24%	8%	0%	13%	54%
Plumbers and Pipe Fitters	65	9%	12%	44	25%	2%	2%	37%	34%	16%	7%	0%	41%	45%
Insulation Installers	35	167%*	233%**	1'	100%	0%	0%	100%	0%	0%	0%	0%	100%	100%
Drywall Finishers	30	200%*	600%**	1'	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%
Drywall Framers & Hangers	30	22%*	65%**	1'	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%
Excavating & Grading Machine Operators	30	9%	10%	26	12%	12%	8%	46%	4%	8%	0%	19%	19%	54%
2) Metal Crafts Workers, Except Mechanics														
Machinists	167	12%	17%	101	47%	3%	4%	19%	49%	39% +	25%	12%	28%	40%
Sheetmetal Workers & Tinsmiths	126	15%	18%	42	26%	5%	2%	38%	38%	29% +	7%	2%	38%	50%
Tool & Die Makers	112	19%	24%	63	57%	10%	5%	16%	46%	33% +	19%	8%	41%	48%

Notes appear at the end of the table

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)∇	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS									
					4. Is this a: (check all which apply)			5. Educational and Training Requirements for entry level (check all which apply)						
					Hard to fill job?	High turnover job?	New emerging job?	No diploma needed	HS diploma/ GED	Vocational curr. (9-12)	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
2) Metal Crafts Workers, Except Mechanics (continued)														
Press Operators	102	300%*	300%**	2'	50% •	50%	0%	0%	100%	0%	0%	0%	0%	0%
Other Metal Crafts Workers	41	11%	17%	26	31% •	8%	0%	38%	27%	27% +	12%	8%	12%	50%
Job & Die Setters, Metal	38	12%	17%	38	32% •	3%	5%	21%	42%	18%	16%	5%	13%	45%
Millwrights	33	4%	11%	20	65% •	0%	5%	15%	60%	35% +	25%	5%	30%	35%
3) Mechanics, Repairers & Installers														
Other Mechanics, Repairers & Installers	118	5%	9%	138	28% •	2%	5%	22%	46%	34% +	17%	8%	12%	46%
Heavy Equipment Mechanics, including Diesel/Aircraft	74	14%	19%	56	32% •	5%	5%	29%	27%	25% +	29%	13%	20%	32%
Air Conditioning/Heating Repairers & Installers	49	12%	19%	46	26% •	4%	7%	13%	46%	30% +	17%	14%	22%	41%
Automobile Mechanics	33	1%	5%	56	7%	9%	2%	29%	29%	36% +	16%	0%	14%	38%
Appliance Parts Repairers & Installers	30	0%	120%**	1'	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
4) Printing Trade Crafts Workers														
Printing Press Operators	159	8%	14%	101	29% •	2%	7%	20%	50%	35% +	15%	8%	22%	42%
Binders	141	13%	20%	17	41% •	6%	6%	18%	41%	35% +	12%	0%	6%	41%
Compositors & Typesetters	51	14%	20%	62	19% •	3%	5%	8%	61%	50% ++	21%	11%	15%	45%
Other Printing Crafts Workers	47	3%	5%	59	14% •	5%	5%	20%	49%	31% +	10%	7%	8%	46%
Photoengravers/Lithographers	39	14%	17%	35	37% •	0%	6%	17%	43%	23%	26%	17%	17%	31%
5) Transportation & Public Utility Crafts														
Telephone Installers & Repairers	53	6%	6%	5	0%	0%	20%	40%	40%	60% ++	0%	0%	20%	40%

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)∇	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS									
					4. Is this a: (check all which apply)			5. Educational and Training Requirements for entry level (check all which apply)						
					Hard to fill job?	High turnover job?	New emerging job?	No diploma needed	HS diploma/ GED	Vocational curr. (9-12)	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
6) Other Crafts & Kindred Workers														
Architectural Draftspersons	80	117%*	133%**	1'	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other Crafts & Kindred Workers	57	11%	11%	14	14%	7%	0%	43%	36%	14%	0%	0%	0%	50%
Inspectors, Other	53	7%	9%	58	26%	5%	3%	17%	53%	24%	9%	5%	9%	50%
OPERATIVES OCCUPATIONS														
7) Semiskilled Metal Working														
Welders & Flame Cutters	186	13%	19%	100	25%	8%	4%	31%	35%	40% +	19%	3%	13%	37%
Punch & Stamping Press Operators	157	11%	25%	61	8%	7%	3%	41%	39%	30% +	10%	2%	2%	38%
Other Semiskilled Metal Working Operators	133	7%	13%	54	7%	9%	4%	39%	37%	35% +	2%	4%	9%	37%
Grinding Machine Operatives	78	13%	20%	40	13%	13%	5%	50%	25%	25% +	8%	0%	5%	40%
Drill Press Operatives	77	21%	24%	40	8%	5%	3%	43%	25%	18%	5%	3%	0%	38%
8) Semiskilled Packing & Inspecting Operators														
Packers & Wrappers, Except Meat & Produce	310	12%	19%	101	5%	7%	8%	41%	42%	7%	0%	0%	5%	36%
Other Semiskilled Packing & Inspecting Operatives	297	37%*	62%**	46	2%	15%	7%	39%	46%	0%	0%	0%	7%	57%
Checkers, Examiners & Related Manufacturing	199	16%	20%	59	5%	2%	2%	37%	49%	10%	0%	2%	3%	46%
9) Other Operatives, Except Transport														
Assemblers	1,702	24%*	30%	107	2%	11%	4%	45%	40%	16%	0%	1%	1%	37%
Sewing Machine Operatives	681	1%	56%**	14	14%	29%	0%	64%	21%	29% +	0%	0%	0%	57%
Aircraft Assemblers	350	50%*	50%**	1'	100%	0%	0%	100%	0%	0%	0%	0%	100%	100%
Other Operatives	247	8%	11%	48	2%	13%	2%	46%	29%	2%	4%	0%	2%	40%
Other Machine Operatives	245	3%	11%	84	12%	13%	6%	36%	40%	13%	2%	0%	4%	44%
Electronic Assemblers	104	17%	21%	2'	0%	50%	0%	50%	0%	50% ++	50%	0%	0%	50%

Table 7, p. 4

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)∇	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS 4. Is this a: (check all which apply)			5. Educational and Training Requirements for entry level (check all which apply)						
					Hard to fill job?	High turnover job?	New emerging job?	No diploma needed	HS diploma/ GED	Vocational curr. (9-12)	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
9) Other Operatives, Except Transport (continued)														
Cutting Operatives, Other	84	16%	17%	50	10%	4%	0%	54%	28%	10%	2%	0%	2%	36%
Painters, Manufactured Articles	73	21%*	25%	54	7%	7%	2%	48%	24%	19%	2%	2%	4%	28%
In-plant Production Workers	63	55%*	55%**	2'	0%	0%	0%	0%	50%	0%	0%	0%	0%	100%
Garage Workers & Gas Station Attendants	40	11%	63%**	15	0%	13%	0%	53%	40%	7%	0%	0%	0%	33%
Laundry & Dry Cleaning Operatives, Other	30	1%	11%	40	8%	15%	3%	83%	13%	3%	0%	0%	0%	28%
10) Transport Equipment Operatives														
Truck Drivers	331	7%	21%	257	9%	6%	2%	51%	35%	7%	2%	0%	3%	36%
Forklift & Tow Motor Operatives	162	7%	12%	184	7%	7%	2%	47%	35%	9%	2%	1%	3%	41%
Delivery & Route Workers	159	8%	18%	101	7%	11%	0%	44%	43%	8%	0%	0%	0%	38%
SERVICE OCCUPATIONS														
11) Cleaning Service Workers														
Building Interior Cleaners, Other	479	3%	32%	92	12%	23%	3%	72%	18%	0%	0%	0%	0%	43%
Janitors & Sextons	314	3%	17%	201	7%	10%	2%	73%	20%	2%	0%	0%	1%	35%
Lodging Quarters Cleaners, Except Private	191	4%	36%	35	3%	23%	0%	77%	9%	3%	0%	3%	3%	17%
12) Food Service Workers														
Waiters/Waitresses, Assistants	1,378	18%*	61%**	22	9%	27%	5%	68%	9%	18%	0%	0%	5%	36%
Food Counter & Fountain Workers	947	24%*	56%**	30	3%	43%	10%	77%	27%	17%	0%	3%	7%	37%
Other Food Service Workers, Except Private	739	15%	49%**	60	7%	27%	3%	65%	27%	10%	0%	0%	3%	35%
Dishwashers	481	2%	77%**	65	3%	40%	2%	77%	33%	10%	0%	0%	3%	80%
Waiter/Waitresses	469	7%	43%**	52	8%	27%	0%	56%	33%	17%	4%	2%	0%	42%
Non-management/Fast Service Restaurant Workers	628	8%	69%**	7	14%'	71%	0%	57%	0%	0%	0%	0%	0%	0%

Table 7, p. 5

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)▽	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS: 4. Is this a: (check all which apply)			5. Educational and Training Requirements for entry level (check all which apply)						
					Hard to fill job?	High turnover job?	New emerging job?	No diploma needed	HS diploma/GED	**Vocational curr. (9-12)**	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
12) Food Service Workers (continued)														
Cooks/Chefs, Except Private Household	414	4%	27%	114	16%	18%	1%	45%	37%	**23%**	8%	5%	10%	40%
Bartenders	34	2%	21%	38	11%	8%	3%	34%	50%	**21%**	11%	8%	11%	39%
13) Health Service Workers														
Nursing Aides, Orderlies & Attendants	537	3%	22%	29	10%	34%	3%	14%	48%	**45%** +	31%	3%	3%	45%
Practical Nurses	304	1%	14%	41	12%	20%	0%	5%	37%	**17%**	44%	34%	0%	12%
Other Health Workers	52	1%	1%	11	9%	9%	18%	9%	45%	**36%** +	18%	18%	0%	36%
Health Aides, Except Nursing	48	15%	16%	12	8%	17%	0%	8%	50%	**42%** +	8%	0%	8%	50%
14) Personal Service Workers														
Housekeepers, Except Private	215	3%	62%**	30	7%	20%	0%	60%	17%	**3%**	0%	0%	3%	23%
Child Care Workers	89	10%	25%	42	5%	14%	2%	10%	64%	**38%** +	10%	2%	2%	38%
Hairdressers & Cosmetologists	69	19%*	22%	17	24%	18%	12%	24%	29%	**59%** ++	24%	0%	6%	6%
15) Protective Service Workers														
Guards	56	2%	5%	72	4%	6%	3%	38%	50%	**7%**	1%	3%	4%	26%
16) Laborers														
Other Laborers	484	16%	29%	98	2%	14%	4%	66%	29%	**5%**	0%	0%	3%	34%
Stock Handlers	451	13%	34%	95	2%	9%	1%	36%	46%	**7%**	0%	0%	1%	36%
Construction Laborers, Other	392	10%	24%	47	9%	38%	6%	60%	28%	**13%**	2%	2%	4%	53%
Freight & Material Handlers	123	5%	10%	86	2%	9%	1%	49%	37%	**7%**	1%	1%	0%	29%
SALES AND CLERICAL OCCUPATIONS														
17) Sales Workers														
Sales Clerks & Sales Workers	705	7%	16%	311	18%	8%	4%	10%	70%	**18%**	8%	7%	3%	36%

Table 7, p. 6

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100) Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement)∇	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	SURVEY QUESTIONS 4. Is this a: (check all which apply) Hard to fill job?	High turnover job?	New emerging job?	5. Educational and Training Requirements for entry level (check all which apply) No diploma needed	HS diploma/ GED	**Vocational curr. (9-12)**	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On-the-Job
17) Sales Workers (continued)														
Insurance Agents, Brokers & Related	109	32%*	37%	31	35%*	10%	6%	6%	58%	**6%**	13%	13%	3%	45%
Telephone Sales Workers	76	2%	155%**	5	0%	40%	0%	40%	60%	**0%**	0%	0%	0%	40%
Real Estate Agents & Brokers	43	22%*	26%	31	10%	6%	6%	10%	52%	**13%**	3%	13%	6%	29%
Advertising Sales Workers	41	16%	47%**	6	17%*	17%	17%	0%	83%	**0%**	0%	0%	17%	17%
18) Clerical & Kindred Workers														
Other Clerical Workers	677	4%	22%	137	7%	5%	2%	7%	70%	**37%** +	7%	4%	4%	35%
Secretaries & Stenographers	574	3%	8%	576	10%	4%	2%	3%	64%	**40%** +	16%	5%	1%	26%
Cashiers	344	9%	14%	91	4%	5%	2%	9%	70%	**32%** +	11%	3%	2%	25%
Computer & Peripheral Equipment Operators	232	7%	13%	214	17%*	3%	7%	2%	54%	**39%** +	26%	27%	1%	23%
Bank Tellers	206	2%	71%**	32	6%	9%	0%	6%	66%	**19%**	9%	16%	0%	31%
Typist/Word Processors	155	2%	6%	98	20%*	7%	8%	3%	63%	**47%** +	20%	8%	2%	32%
Keypunch Operators	143	5%	20%	126	11%	2%	2%	2%	67%	**42%** +	26%	11%	1%	25%
Bookkeepers	142	6%	10%	474	12%	3%	2%	3%	60%	**39%** +	17%	9%	1%	21%
File Clerks	115	4%	17%	136	4%	12%	1%	9%	63%	**29%** +	4%	1%	2%	29%
Receptionists	113	6%	18%	346	5%	4%	2%	2%	70%	**31%** +	7%	3%	1%	26%
Shipping & Receiving Clerks	91	7%	11%	228	7%	4%	1%	10%	67%	**14%**	2%	1%	0%	29%
Statistical Clerks	85	1%	15%	45	4%	7%	0%	11%	58%	**22%**	16%	2%	0%	36%
Other Office Machine Operators	66	1%	34%	22	9%	5%	9%	3%	9%	**10%**	3%	0%	1%	7%
Clerical Supervisors	65	4%	9%	138	11%	4%	2%	4%	59%	**29%** +	14%	11%	1%	31%
Payroll & Timekeeping Clerks	56	4%	12%	199	6%	2%	1%	4%	67%	**36%** +	10%	2%	0%	25%
Stock Clerks & Storekeepers	52	2%	6%	99	10%	5%	1%	10%	63%	**20%**	3%	0%	0%	36%
Other Secretarial Workers	48	3%	13%	64	8%	2%	0%	3%	58%	**38%** +	20%	3%	0%	33%
Accounting Clerks	44	1%	3%	13	8%	0%	0%	0%	77%	**46%** +	62%	8%	0%	54%
Telephone Operators	41	1%	3%	99	8%	6%	1%	4%	69%	**23%**	1%	2%	1%	32%

Table 7, p.

Results from interviews and mailings involving 1,142 Nashville area businesses

Percentages express proportion of businesses responding with a check (✓) indicating "yes" (rounded to nearest whole percent)

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100)					SURVEY QUESTIONS									
					4. Is this a: (check all which apply)			5. Educational and Training Requirements for entry level (check all which apply)						
Top 100 out of 651 entry level job titles (30 or more openings)	JOB OPENINGS 1982-85 (Expan. and Replacement) ∇	GROWTH RATE (Based on Expansion)	HIRING RATE (Based on Expan. and Replac.)	NO. OF BUSINESSES Reporting Job Title	Hard to fill job?	High turnover job?	New emerging job?	No diploma needed	HS diploma/ GED	Vocational curr. (9-12)	Vocational curr. (13-14)	Technical 2 yr. Degree	Apprenticeship	On the Jot
18) Clerical & Kindred Workers (continued)														
Counter Clerks, Except Food	39	7%	37%	30	3%	3%	3%	13%	60%	33% +	13%	10%	3%	33
Desk Clerks	31	5%	16%	28	7%	7%	4%	4%	75%	18%	14%	0%	0%	18
TOTALS and PERCENTAGES for top 100 job titles	21,744	9%	21%	7,649#	12%	8%	3%	25%	49%	25%	10%	5%	6%	34
TOTALS and PERCENTAGES for all 651 job titles	23,076	8%	17%	9,281#	13%	7%	3%	24%	49%	24%	10%	5%	6%	35

∇ Actual numbers projected by 1,142 businesses

* GROWTH RATE ranked within top 100 (17% or more growth rate) of 651 job titles
Growth rate = Projected expansion compared to number employed in 1982
Average growth rate for Survey = 7.6%

** HIRING RATE ranked within top 100 (39% or more hiring rate) of 651 job titles
Hiring rate = Projected expansion and replacement compared to number employed in 1982
Average hiring rate for Survey = 17.4%

' When reviewing results presented, consider fact that less than 5 businesses reported the job title

• 14% or more (above average [13%] for survey) responding employers indicated job title as hard to fill

+ 25% or more (above average [24%] for survey) responding employers indicated a secondary vocational curriculum required for job title

++ 50% or more responding employers indicated a secondary vocational curriculum required for job title

# NUMBER OF BUSINESSES total more than 1,142 since most businesses reported projections for more than one job title

A special analysis of the top 100 jobs with the most projected openings, 1982-85, was done to determine which jobs were identified by business and government personnel as being "Hard to fill" and "Requires a secondary vocational curriculum".

> If a majority of the job titles in an occupational group were identified by employers as being above the average according to the job titles on the total survey, then the occupational group was defined/categorized as being "Hard to fill" and/or "Requires a secondary vocational curriculum"; the survey average for "Hard to fill" was 13% and the average for the survey on the "Requires a secondary vocational curriculum" response was 24%.

Table 8 shows the occupational groups which qualified for either one or both of the questions and also includes the occupational groups which did not qualify for either of the questions. The following 3 of the 18 occupational groups revealed a majority of job titles which were considered by the employers to be both "Hard to fill" and "Requires a secondary vocational curriculum":

- Metal Crafts Workers, Except Mechanics
- Mechanics, Repairers, and Installers
- Printing Trade Craft Workers

Also to be noted on Table 8 is that Construction Craft Workers, Other Crafts & Kindred Workers, and Sales Workers are considered, by the above definition, to be "Hard to fill" and five additional occupational groups "Require a secondary vocational curriculum": 1. Transportation & Public Utility Crafts, 2. Semiskilled Metal Working, 3. Health Service Workers, 4. Personal Service Workers, and 5. Clerical and Kindred Workers.

In a study conducted by the Tennessee Commission on Education (1982), the fastest growing jobs in the United States between 1978 and 1990 (Source: Occupational Outlook Handbook, 1980-81) were listed along with the entry level educational requirements for each occupation. Of the 26 occupations listed, only 8 occupations required a college degree for entry level employees, while 11 occupations required a high school diploma or less. There were 10 occupations which showed that a vocational education background was required for the majority of entry level workers.

Table 8

OCCUPATIONAL GROUPS: "HARD TO FILL" AND/OR "REQUIRE SECONDARY VOCATIONAL CURRICULUM"

Employment and Training Needs Survey

Majority of 100 Top Demand Job Titles in the Following Occupational Groups:

	Are Hard To Fill *	Require a Secondary Vocational Curriculum **
1.	Construction Crafts Workers	
2.	Metal Crafts Workers, Except Mechanics	Metal Crafts Workers, Except Mechanics
3.	Mechanics, Repairers & Installers	Mechanics, Repairers & Installers
4.	Printing Trade Craft Workers	Printing Trade Craft Workers
5.		Transportation & Public Utility Crafts
6.	Other Crafts & Kindred Workers	
7.		Semiskilled Metal Working
13.		Health Service Workers
14.		Personal Service Worker
17.	Sales Workers	
18.		Clerical & Kindred Workers

NOT INCLUDED IN EITHER OF ABOVE:

8. Semiskilled Packing & Inspecting Operators
9. Other Operatives, Except Transport
10. Transport Equipment Operatives
11. Cleaning Service Workers
12. Food Service Workers
15. Protective Service Workers
16. Laborers

* Above average for survey as reported by employers. Average = 13%
** Above average for survey as reported by employers. Average = 24%

When these data are used for program revisions in Metro Schools' vocational programs, the number of businesses reporting any job title which "Requires a secondary vocational curriculum" and was identified as being "Hard to fill" should be considered in addition to the actual number of openings projected for that job title.

QUESTION #6:

Businesses interested in working with local educational institutions and service agencies

The results of the responses to the question on the survey, "Would you be interested in working with local educational institutions and service agencies?" were quite encouraging to Project Staff. There were 220 businesses which expressed an interest in working with school systems "To develop curriculum for training". An even larger number of businesses (258) gave an affirmative response to their interest in becoming or continuing to be "A placement source for trained employees or cooperative education students". There were 153 businesses indicating an interest in "Developing on-the-job, intern, preapprenticeship, and non-paid work experience programs", while 99 businesses affirmatively responded to the question concerning an interest in "Developing on-site class training to upgrade skill level of employees".

ADDITIONAL COMMENTS

Comments by 86 of the 1,142 employers were noted on the survey form by the interviewers. The substance of some of the comments was to explain why information about the business could not be revealed. Several comments consisted of suggestions for special ways that employers might become involved with the educational system or how they were now contributing to the educational process.

The majority of the comments (N=55) gave information concerning the skills and characteristics that prospective employees need to have to best function in the employers' businesses. Moreover, some employers made specific recommendations for improving vocational education.

The need for students to have a good background in "The Basics" was mentioned most frequently by the employers (N=15). Seven of the 15 employers specifically mentioned reading, writing, and or math as necessary for an adequate background; spelling was mentioned by three employers and thinking was mentioned by two employers.

The category of "Good work habits/Good attitudes" was the second most frequently mentioned type of employee characteristic needed (N=11). Several of the 11 employers (N=5) pointed out that students should be made more aware of "The world of work", that is, help students to appreciate the value of having a job and feeling pride in a job or task successfuly completed. Others mentioned the need for the characteristics of responsibility, discipline, willingness to do a good job, etc. Work habits, such as punctuality, appropriate dress and appearance, following orders with instructions, and getting along satisfactorily with other people, were mentioned by 6 of the employers.

The need for continual or additional vocational education in various areas was mentioned by several of the employers. One should keep in mind, as mentioned previously in this report, that an average of 25% of the 651 job titles were reported by employers on the survey form to require vocational training at the secondary level, therefore, the following comments were only supplementary statements contributed by employers. These supplementary comments requested that the following vocational programs or areas of instruction continue, show improvement, or be added to the current vocational education programs in the Metro Nashville area:

- Service technicians with skills in electronics
- Computer skills
- Welders
- Blue print readers
- Tourism
- Fiberglass
- Basic bookkeeping
- Typing
- Maid service
- Computer repairs
- Metal training
- Industrial mechanics
- Building trades (masonry, roofing, etc.)
- Maintenance electricians
- Maintenance mechanics
- Powdered metals
- Safety
- Auto Parts (taught with auto mechanics)

Only two employers suggested that a reduction in vocational education should occur. One of the two said there were now too many radio and television technicians while the other employer stated that if the vocational program would teach "The Basics", then the special skills needed for employment would be taught on the job.

The remaining comments were classified by the writer of this report as miscellaneous and included the following:

- Vocational students seem to be better employees as opposed to regular academic students.
- Schools don't pay enough to get good shop instructors.
- Trig needs to be taught from a more practical point of appreciation.
- There is not enough input by parents regarding course selection for students.
- Would like to see more opportunities for students to spend meaningful time in places where work is going on.
- Students need more information on money management. Students need to be taught how our economics system works and to know that the only reason people hire other people is to solve a problem the person hiring has.
- Schools need to be given more muscle power in order to teach.

- There is need for more encouragement for students to receive better guidance toward preparation for the professions.
- Please bring discipline back into the schools.

A list of all comments that indicated an interest in becoming involved or continuing involvement with the school system was disseminated in February, 1984, to all vocational education coordinators, program assistants, co-op teachers, and guidance counselors in the Metro Nashville School System. The comments list included requests made by employers for instructors or other school personnel to contact them concerning the employers' needs to fill jobs with students who have completed or will complete certain occupational programs.

CONCLUSIONS AND DISCUSSION

SURVEY SUMMARY

To aid in vocational programming decisions, the Metro Public Schools' Vocational Education Exemplary Project (VEEP) conducted an Employment and Training Needs Survey which involved 1,142 businesses in Metro Nashville and surrounding counties. According to the results of the survey, the SERVICE OCCUPATIONS is the occupational category where the most entry level job openings, due to expansion and replacement, can be expected to occur between 1982 and 1985. Of the top 25 jobs out of 651 job titles with the most projected openings, 14 of the top jobs were within the SERVICE OCCUPATIONS category. The 14 job titles included 7 in the occupational group Food Service Workers. The remaining 7 SERVICE OCCUPATIONS belonged to the Cleaning Service (buildings), Health Service, and Laborers occupational groups (see Table 7, p.35 of this report to review application of terminology: occupational category, occupational group, and job title).

Within the SALES AND CLERICAL category, "Sales clerks", "Secretaries and Stenographers", "Cashiers", and "Other Clerical workers" were job titles which were part of the top 25 jobs with the most projected openings. "Electricians" and "Carpenters" of the CRAFTS AND KINDRED OCCUPATIONS category were also within the top 25 jobs with the most projected openings.

Users of the results of the employment and training needs survey should maintain awareness that the responses of the employers reflect possible trends in the upcoming job market for entry level jobs, not comprehensive or exact projections.

Some of the limitations of the survey results to be considered are:

1. Erroneous numbers were probably reported by some of the employers. Studies show that many employers tend to overestimate their future employment needs while others are unable to visualize the future demands of their businesses (Cummings, 1984; Flynn, 1984).

2. Only a sampling of businesses (1,142) in the Nashville area contributed to the survey results.

3. The survey was conducted during a recessionary year (1982) which may have significantly affected the results, especially for particular job titles.

The results of the exemplary project survey are consistent with occupational projections developed by the Bureau of Labor Statistics (BLS) for the nation. For example, the BLS reported that SERVICE PRODUCING INDUSTRIES are projected to account for almost 75% of all new jobs between 1982 and 1995 (Personick, 1983). Also, the BLS projected faster than average employment growth among "Food and Beverage Preparation" service occupations (Nardone, 1984). Personick (1983) reported that a growth in "Construction Occupations" (as projected by both the VEEP and BLS) will occur because of the pent-up demand following the 1982 recession although by the late 1980's a slowdown in the rate of new household formation is expected to dampen these demand pressures.

However, there were 3 job titles which emerged as part of the top 25 jobs with the most projected openings on the Metro Schools' survey which do not appear on the top jobs list of other sources. All 3 of these job titles were part of the Other Operatives, Except Transport occupational group: "Assemblers", "Sewing machine operatives", and "Aircraft assemblers". Certainly, the uniqueness of these 3 job titles appearing on the list of high demand jobs of the school sponsored survey could be a manifestation of limited sampling of the business community, but further investigation is needed to determine if vocational education program revisions should be considered.

As the Bureau of Labor Statistics has projected, the VEEP results revealed relatively few job openings due to the rapid growth in high-technology industries. Such projections have led economic experts to declare that high-technology industries, even when defined quite broadly, can be expected to account for only 17% of the new jobs created between 1982 and 1995 (Lewis and Fraser, 1984). In fact, an article by

Rumberger (1984) reported that only 3.2% of the American labor force currently works in high-technology occupations and the BLS Statistics Projections can be interpreted to show only an increase of 4.4% over the next decade.

Generally, the projected growth rates (not to be confused with numbers of projected openings) found on the Employment and Training Needs Survey were not consistent with growth rates or change rates for individual job titles presented by other sources. Most of these differences can probably be attributed to differences in the methods by which the data are collected as well as differences in sampling sizes.

Educational and training information reported by the 1,142 surveyed businesses indicated that the occupational groups which are above the average in being "Hard-to-fill" and "Require a secondary vocational education" are:

1) Metal Crafts Workers, Except Mechanics
2) Mechanics, Repairers, and Installers, and
3) Printing trade Craft Workers.

There were 7 other of the 18 occupational groups which were either "Hard-to-fill" or "Require a Secondary vocational Curriculum". These characteristics of the occupational groups and the specific job titles involved should be seriously considered when programming decisions are made.

Almost 400 employers indicated an interest in working with the educational system to 1) develop curricula, 2) serve as a placement source, 3) serve as a preapprenticeship source, and/or 4) develop on-site class training. Lists of the businesses indicating interest in each of these four questions have been arranged and labeled according to Standard Industrial Classification (SIC) numbers and have been disseminated to appropriate Metro Schools' personnel. Several businesses indicated an interest in all four types of involvements.

As Rosenthal and Pilot (1983) stated, occupational projections/supply-demand analyses are only one among many factors to be considered by educational officials in planning programs. Other factors that must be considered include a) program costs, b) availability of teachers, equipment, and facilities, c) student interest, d) employer hiring and training practices, e) student follow-up data, and f) employer follow-up data. The occupational projections and supply-demand analyses used should include data for the local area, the state, and the nation as a whole. In summary, occupational projections must be used with related data to form a picture of prospective supply-demand conditions.

FACTORS EXPECTED TO IMPACT SECONDARY VOCATIONAL EDUCATION

To help answer questions concerning how Metro Schools should plan/revise its vocational programs as a result of the survey outcomes, it seemed important to examine some of the numerous studies and developments which have occurred since the administration of the Employment and Training Needs survey in 1982. Certain of these occurrences should and/or will probably have a strong impact on the future of secondary vocational education. These factors are presented below since they were considered, in addition to the occupational and economic projections presented above, as recommendations were formulated for this report.

Impact Factor #1:

A shift from an industrial to an information based society

As presented in Naisbitt's (1982) book, Megatrends, the economy appears to be shifting from the production and distribution of goods to the exchange of information and services as a result of the combined influences of technological change and foreign competition. This shift is not just a projection of the future but a reality (Lewis &

Fraser, 1984). According to some reports, only 13% of the U. S. work force is employed in manufacturing, while 60% either produces or processes information (Richman, 1982). Another report (Daggett, 1984) gave an estimate that well over 75% of all jobs are now in information and service occupations, whereas just twenty years ago less than 25% were in those catagories.

Our economy is becoming part of a global structure moving away from isolation and national self-sufficiency. In fact, by the year 2000, the third world will be manufacturing as much as 30% of the world's goods (Naisbitt, 1982). The following are some additional facts which can and probably will have strong significance for vocational education planners:

1. 74% of all markets currently lie outside the United States and one out of every four manufacturing jobs now depends on foreign markets.
2. 80% of the new jobs are created by establishments no more than four years of age and with 20 or fewer employees.
3. Of the ten categories of jobs the Department of Labor predicts will grow most in the next decade, not a single one is "high tech"; less than 10% of new jobs will be high-tech. (Groff, 1984, p. 4)

(Jobs involving low-tech/new-tech skills are not included in the prediction.)

The continuing transition of the American economy into the information age is helping to fuel the debate over public education (Lewis & Frasier, 1984). It is expected that the rapid rate of technological change will make it virtually impossible to keep institutional equipment and curricula up to date (Lewis, 1984).

A national research counsel (Sherman, 1983) noted that technological innovation will have a pervasive effect on future jobs and that its implications for vocational education can scarcely be overestimated. Nevertheless, the counsel admitted that the problem of designing vocational education programs to meet these changing skill requirements is that there is no agreement on what these skill requirements will be or even on the general direction of change. As Rumberger (1984) stated, it is extremely difficult to assess how technology will affect the number of jobs available in the future economy since technology both destroys and creates jobs.

Impact Factor #2:

Increase in school dropout rate/Increase in job seeking rate

According to an article in the Report on Education of the Disadvantaged (1985), 15.3% of the nation's students dropped out of school in 1983. If that rate continues, 6 million of the 41 million children now in school will not receive a high school diploma. Moreover, between 1972 and 1982, the high school dropout rate for the nation increased by 5.5% (Bottoms, 1984).

A recent report showed that in Tennessee, about 33 1/3% of the students in grade nine drop out before they graduate from high school, and only about 50% of those who do graduate go on to postsecondary education. These rates indicate that about 66 2/3% of today's ninth graders in Tennessee will be attempting to enter the job market within three years (Dickerson, 1984).

The 1983-84 Dropout Report for Metro Nashville Public Schools revealed that the ninth through twelfth grade cumulative withdrawal rate for the last five years was the highest during 1983-84 — 29.5% for 1983-84 compared to 25.5%, 24.6%, 21.6%, and 27.8% for 1979-80 through 1982-83 school years, respectively. To be considered is the fact that these rates included only those students enrolled and dropped during the school year and did not include students who dropped out over the summer months. In fact, by the time the ninth graders of the "Senior Class of 1984" became high school graduates, 44.6% of the students had withdrawn from school (6,091 ninth graders in October, 1980, compared to 3,373 graduates in June, 1984).

The Basics, 1984-85 publication of Metro Nashville Public Schools reported that 42.2% of the graduating class of 1984 went directly into the job market or attempted to do so, which is the largest percent of the last five year period. The number of students seeking work who would have been graduates of 1984 if they had not dropped out of school are in addition to the 42.2% of the graduates seeking jobs.

An increase in the dropout rate indicates that a larger portion of the secondary-age population will be attempting to enter the job market. Educators stress that efforts need to be made through vocational programming revisions to prevent students from dropping out of school and also to provide students who do continue in secondary schools with opportunities to develop marketable skills that many will need immediately after high school.

Impact Factor #3:

Gradual decrease in the number of secondary students but proportionally more students from financially disadvantaged families

Lewis and Fraser (1984) reported that birth rates in financially disadvantaged families in the United States have traditionally been higher than in the middle class population. Furthermore, these rates did not decline as much as the rate for middle class groups during the late 1960's and 1970's. Thus, although there will be fewer young people in the high schools for the next 10 years, there will be proportionately more from financially disadvantaged families. "It is young people from such a background who often have the most difficulty in school and who are likely to need special services" (Lewis and Fraser, 1984, p. 28).

Impact Factor #4:

New availability of occupational projections and supply/demand data

As of January, 1985, occupational projection data have been published and disseminated for Nashville/Davidson County as well as for other Job Training Partnership Act Service Delivery Areas of Tennessee (Tennessee Employment Projections [SDA's], 1984). The compilation of occupational information has been developed through the efforts of the Bureau of Labor Statistics and the Tennessee Department of Employment Security, Research and Statistics Division. Surveys conducted by local school systems strictly for the purpose of collecting job projection data are no longer necessary or efficacious since the employment security data are now presented for individual occupations by areas of the state. Formerly, such data were not available except for the whole state. Too, the employment securitry data may show more congruence with actual employment than data collected by local surveyers since the former are quite comprehensive and are based on multiple and complex methods of looking at anticipated job market developments.

In addition, a standardized Occupational Information System (OIS) has been developed and is ready for implementation as a pilot program in Metro Schools' Department of Vocational Education. Through several acts of the U. S. Congress, which occurred between 1972 and 1982, the National Occupational Information Coordinating Committee (NOICC) and its state counterpart (SOICC) were created and given the responsibilities of establishing the OIS for the purpose of serving the needs of vocational education and employment and training programs at local, state, and federal levels (Frugoli, 1983). The OIS was also designed to encourage coordination and avoid duplication of effort in the development of occupational information and to give special attention to the labor market information needs of youths and adults. The OIS includes occupational projection data, supply data reported by public postsecondary institutions with vocational/technical programs, and demand data from the Job Service Program.

Impact Factor #5:

National and commissioned reports on "Excellence in Education"

Reports such as A Nation at Risk: The Imperative for Educational Reform, by the National Commission on Excellence in Eduation (1983), and High School, by the Carnegie Foundation (Boyer, 1983), emphasized the need to improve education at the secondary level by reportedly making the curriculum more academic. These reports on secondary education have caused many states to increase the credits required in English, Science, and Mathematics for high school graduation which has decreased the time available for vocational programs.

The concern seems to be that high school students are not obtaining a solid foundation in the communication and computational skills that underlie all future educational and occupational efforts (Lewis and Frasier, 1984). The National Commission Report further claims that poor quality education of American high school graduates contributes to the declining ability of American companies to compete with foreign businesses.

One criticism of vocational programs brought out by the Carnegie members (Boyer, 1983) was that even big schools are rarely able to offer a full range of vocational courses with well-trained staff and up-to-date equipment, so they are not keeping students current with the labor market. In addition, the report stated that vocational students are often academically short-changed. A committee appointed by the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine asked employers to express their opinions about the employability of high school graduates who don't go to college. As a result, their report, High Schools and the Changing Workplace (1984), said that too many graduates of American high schools are unemployable because they lack the skills needed to hold a job, including reading, writing, computing, expressing themselves, understanding instructions sufficiently, and inter-personal relationship skills.

The amount of knowledge needed and the sophistication of technological developments seem to necessitate learning more earlier and continuing education longer. However, in some states, one outcome of such recognition of increased need for knowledge has been a "squeezing-out" of vocational and other programs that do not appear to fit the traditional concept of an academic discipline.

Of special interest to vocational educators is the fact that the Carnegie Foundation report proposed the elimination of separate vocational and academic tracks in favor of a core curriculum that would prepare students for either college or work (Boyer, 1983). In addition to the traditional academic courses, the report stated that a course in technology and a seminar on work should be a part of the core curriculum. The report on High Schools and the Changing Workplace (1984) found that "the ability to learn and to adapt to changes in the workplace" (p. xi) was the major asset required by employers of high school graduates seeking upwardly mobile careers. Too, a positive attitude, sound work habits, reliability, and cooperation were given a high value by employers. Core competencies needed to perform entry level jobs and to continue the learning process included a) reasoning and problem solving, b) science and technology, c) interpersonal relationships, d) social and economic studies, and e) personal work habits and attitudes.

Impact Factor #6:

Studies and programs on "Excellence in Vocational Education"

A plethora of reports and studies has been disseminated between 1982 and 1984 concerning vocational education. Some of these reports were in response to the "Excellence in Education" reports but others emanated from committees and task forces created previous to the release of the reports discussed above in Factor #5. These publications will be cited for background information and support for the recommendations which will be presented in the next section of this report.

The reports discussed below are listed, generally, according to the dates released; no effort was made to assign rank according to importance of the publication or information.

The Parker Project (1983)

The Janesville Foundation and Wisconsin Department of Public Instruction were responsible for a business and education survey which yielded valuable insights into the opinions of employers and educators concerning a) what is the responsibility of secondary schools, b) what skills will be needed in the job market during the next decade, and c) what skills do high school graduates lack to be successful in entering and functioning in today's job market, etc.

Education for Tomorrow's Jobs (Sherman, 1983)

At the request of the U. S. Department of Education, the Committee on Vocational Education and Economic Development in Depressed Areas was established in 1981 to bring a new perspective to the relationship among vocational education, economic development, and the private sector. The committee focused on how vocational education, in collaboration with private-sector employers, can improve the employability of young Americans and enhance their long-term contributions to the economy.

The committee concluded that a) some vocational education programs do improve the employability of graduates, but the quality of programs overall is highly variable, b) the success of vocational education programs and their collaborative elements (with the business world) depends in large measure on their ability to respond and adapt to the changing economy and to local situations, and c) vocational education should become an equal partner with college-preparatory education in the educational system as a whole.

Recommendations by the committee included: a) expand collaboration between vocational educators and private-sector employers, b) improve coordination between vocational education and employment training programs, and c) experiment with radically different ways to improve access to programs and also to remedy deficiences in the basic skills of students. Policy changes to improve financing of vocational education programs and changes in teacher certification requirements were also addressed by the committee.

A Nation at Risk and People Forgotten (Rask, 1983)

Rask in his paper A Nation at Risk and People Forgotten (1983) went beyond the report by the National Commission on Excellence in Education, A Nation at Risk: The Imperative for Educational Reform (1983). Rask says that although the commission laid the ground work for a full scale commentary on education in America, it then isolated their discussion to those services being provided to the 20% of the youth who will successfully pursue college and university degrees. Rask's intent was to make it clear that we must serve more than 20% of our youth or, in fact, we need to serve all of our youth and adults.

Rask reports that 80% of all of the youth enrolled in the public schools will never complete a course of study at a college or university. In fact, over 50% of all secondary students will never pursue formal education after departing high school. In 1983, 32% of the unemployed in America were high school dropouts. Rask questions that, as the national commission indicates., academic excellence will resolve the profit and employment problems which put the nation at risk.

According to Rask (1983), vocational education is the most relevant program available to 80% of the noncollege graduation bound students. He goes on to say that high quality vocational and technical programs articulated through secondary and postsecondary levels can provide a human resource to address the nation's risk—profit for small and large businesses.

Tennessee Task Force for Secondary Vocational Education (1983)

In order to review the standards and expected outcomes of the secondary vocational education system in Tennessee, The Tennessee State Board of Vocational Education directed that a Task Force on Secondary Vocational Education be appointed. The Task Force was charged with providing recommendations to the State Board for Vocational Education's Advisory Committee.

The Secondary Task Force formulated recommendations relative to the role, scope, and program offerings for secondary vocational education in Tennessee for the 1980's and 1990's and were offered as a total program for improvement.

A Nation at Work: Education and the Private Sector (1984)

The National Advisory Council on Vocational Education held five regional forums in 1983 on the topic of business and vocational education. Employers of both large and small businesses discussed their perceptions of vocational education and education generally, their expectations, and areas where improvements are needed. The themes heard most frequently from the employers were: a) the reliance of employers on high quality vocational programs to provide trained workers; b) a desire to see improvement in all areas of vocational education to bring programs up to the highest standards and keep them abreast of the latest developments in technology and skill requirements; and c) the need for greater relevance in education generally to the requirements of the workplace so that all students will be prepared to function when they move into the world of work.

Programs Directions for Occupational Education in New York State (Daggett, 1984)

To meet the challenge of the technological revolution, the New York State Education Department began a "Futuring Project" in 1981. The project was a comprehensvie review of the occupational and practical arts education that specifically addressed the technological, demographic, economic, and social changes in society, and considered the delivery of vocational education through the remainder of the 20th century (Kadamus, 1984).

The futuring project focused on identifying those broad, transferable skills that cut across many occupations; communication, problem solving, decision making, human relations, computer literacy, and an understanding of basic economic concepts. Specialized training was also reviewed.

In March, 1984, after dicussions throughout the state with nearly 14,000 educators, business leaders, and futurists, such as John Naisbitt and Alvin Toffler, the State Board of Regents approved the "Action Plan To Improve Elementary and Secondary Education Results in New York". The Action Plan set new state standards and expectations for education. It called for more rigorous high school graduation requirements and a strengthened curriculum starting in the earlier grades. Vocational education is expected to be more closely intergrated into the overall elementary and secondary education system in New York State and to increase opportunities for students as they make career and educational decisions.

The program begins in the 7th grade with a required course in "Technology Education". Hands-on experience is placed in the broad context of understanding, using, and controlling technology at home and in the work place. The technology program also provides students with an understanding of the process of selecting and preparing for existing and emerging occupations.

The other required new course for all junior high students is "Home and Career Skills". The new course is designed to prepare students to meet their adult responsiblities as members of families, consumers, home managers, and wage earners. It will teach students to analyze problems, propose alternative solutions, make choices, and plan their careers.

In grades 9 and 10, students following an occupational education sequence will complete units in an "Introduction to Occupations" course that focuses on skills, knowledge, and attitudes applicable to a variety of occupations and career options.

In addition to modules on resource management and on the working citizen, series of modules will be offered that have been developed around and relate to clusters of skills in business, health, service, trade, technical, technology, and agricultural programs. Throughout these programs, students will be required to analyze career goals and develop personal strategies to meet these goals.

For vocational education students, the second unit of math or science required for graduation may be applied math or applied science. All vocational education sequences are being restructured for grades 11 and 12 so that the programs will prepare students for a choice of jobs rather than one specific job.

The occupational education developments of New York state have been presented as one component of Impact Factor #6 because the Action Plan seems to represent nationwide trends in vocational education.

The Unfinished Agenda (1984)

During 1984, the National Center for Research in Vocational Education sponsored a National Commission on Secondary Vocational Education funded through the U. S. Department of Education. The 14 commissioners represented education, business, and labor and their activities were intended, in part, to fill the gap left by other major educational commissions, which focused predominantly on the academic objectives of secondary students. This gap was seen by the commission members as being The Unfinished Agenda.

"The assumption is that more academics, which may be the best preparation for college, is also the best preparation for life. This assumption is wrong" (p.1) is a quote from The Unfinished Agenda which reflects the commission's concerns that other national commissions largely ignored the different needs, abilities, and learning styles of high school students. The Commission's major answer to the problem is to intergrate academic and vocational studies so that all students will be able to choose from a comprehensive set of course offerings. The group looked at shifting job requirements and the changing workplace conditions and developed a series of recommendations for improving vocational education's role in the American high school.

The issue of "quality" or "lack of quality" has been the dominant theme addressed by the recent committees examining academic education and is a major issue in vocational education. The recommendations presented in The Unfinished Agenda were said by the commission members to have been set in that context.

A few of the specific recommendations from the report included:

* Schools should not provide separate tracks that lead to distinct diplomas.

* Secondary Vocational Education courses should provide instruction and practice in the basic skills of writing, speaking, listening, and problem solving.

* Vocational courses must be enriched and diversified to make them attractive to all students, including the college bound.

Other recently released documents which have contributed significantly to the information that should be considered as a part of the vocational planning process include, but are not limited to, the following:

Tennessee Comprehensive Education Study (1982)

Action for Excellence (1983)

Business/Industry Linkage Project (1983)

Survey of Business (1983)

Results of National Association of Manufacturers' Survey (1983)

The 15th Annual Gallup Poll of the Public's Attitudes toward the Public Schools (1984)

Special Committee Report on Vocational, Technical, and Practical Arts Educators (1984)

RECOMMENDATIONS

As the occupational data and recently published documents were analyzed for presentation in this report, three groups of recommendations emerged. The recommendations and citations of documents which support or give further information about the recommendations are given below:

Program Planning/Revisions Based on Occupational Projections and Relevant Employment Data

Recommendation #1

Compare current vocational programs and enrollment figures in Metro Schools to the occupational projection results for Nashville/Davidson County area from several sources including the Metro Schools' Employment and Training Needs Survey and the Occupational Employment Statistics (OES) program of the Department of Labor. Analyze

Recommendation #1 continued:

to determine if congruence exists between programs offered and long- and short-term demands of the employment sector. In addition to the number of projected openings for each job, consider the employer's indications (on the Metro Schools' survey) of which jobs "required a secondary vocational curriculum" and which jobs were identified as being "hard-to-fill".

(Bienstock, 1981)

(Tennessee Comprehensive Education Study, 1982)

Recommendation #2

Make use of the local job projection and supply data of the Occupational Information System (OIS) available on microcomputer disks. (Disks and implementation services provided by Tennessee Department of Employment Security, Research and Statistics Division). Seek additional supply data (beyond the OIS completer figures gathered from public postsecondary institutions) before any final decisions are made to add or delete vocational programs. The supply of workers in most occupations is augmented by students who are prepared a) in private vocational schools, b) through employer sponsored training, and c) by on-the-job experiences.

(Frugoli, 1983)

(Rosenthal & Pilot, 1983)

(Tennessee Comprehensive Education Study, 1982)

(Orth & Russell, 1980)

Recommendation #3

Periodically conduct follow-up studies of random samples of Metro Schools'

Recommendation #3 continued:

graduates who have completed vocational programs to determine placement rates by program. Simultaneously question employers' perceptions of the level and appropriateness of graduates' competencies. Use survey outcomes as factors to consider whether existing programs are relevant to the job market.

(Maxwell & West, 1980)

(Sherman, 1983)

Recommendation #4

Search for new and emerging skills needed rather than concentrating on attempts to identify new and emerging occupations. Focus on the changing process, such as the tools used and the way the work flows. Ask advisory committees on a regular basis to identify current and emerging skills needed. Involve small as well as large businesses.

(Beinstock, 1981)

(Flynn, 1984)

(Fountain, 1982)

(Maxwell & West, 1980)

(Orth & Russell, 1980)

(Sherman, 1983)

(Tennessee Task Force for Secondary Vocational Education, 1983)

(The Unfinished Agenda, 1984)

Program Planning/Revisions Based on Employers' Comments Expressed on the Employment and Training Needs Survey and on Relevant Literature Sources

Recommendation #5

Identify common core competencies that seem vital to success in most jobs which

Recommendation #5 continued:

all completers of secondary programs should master. In coordination with the academic departments, develop plans for any vocational programming revisions needed to be able to provide the experiences necessary to bring about success in the common core competencies.

(Boyer, 1983-Carnegie Report)
(Daggett, 1984, New York State
Education Department)
(High Shcools and the Changing Workplace,
1984)

Recommendation #6

Start occupational instruction in the elementary grades to prepare students for the 5 or 6 jobs in which they will likely be employed during their lifetime. Coordinate the teaching of the common core competencies (i.e., the basic skills, keyboarding, data manipulation, problem solving and decision-making, computer literacy, etc.) with academic courses so that students will gain knowledge and have appreciation for transferable skills.

(Anniston, 1983)
(Daggett, 1984)
(Gonzales, 1985)
(Hunter, 1985)
(Lemons, 1984)

Recommendation #7

Establish a unit of instruction in technology education for all students in the Middle School years. Design the technology program to help students understand, use, and manage technology and to emphasize systems of technology in fields such as

Recommendation #7 continued:

construction, communications, production, and transportation.

(Boyer, 1983)

(Daggett, 1984)

(Dyrenfurth, 1985)

(Kadamus, 1984)

(Rumberger, 1984)

Recommendation #8

Establish a unit of instruction for all students in the Middle School years which addresses career and home skills. Design the program to aid students to develop responsibilities as wage earners, consumers, home managers, and family members. Objectives of the program should include the development of skills which lead to effective home and workplace decisions and which will enhance employment potential.

(Kadamus, 1984)

Recommendation #9

Establish a course for all ninth graders which includes an orientation to secondary vocational programs, aptitude/interest testing, basic employability skills, counseling for careers, and exposure to career options or training available upon graduation.

(Daggett, 1984)

(Tennessee Task Force for Secondary Vocational Education, 1983)

Recommendation #10

Expand specialized occupational education so that broad, transferable skills are emphasized which will be applicable to clusters of jobs rather than specific skilled

Recommendation #10 continued:

occupations (e.g., mathematical and manipulative skills, communication skills, reasoning and problem-solving skills, planning and decision-making skills, and interpersonal skills).

(Gonzales, 1985)
(High Schools and the Changing Workplace, 1984)
(Kadamus, 1984)
(Tennessee Task Force for Secondary Vocational Education, 1983)

Recommendation #11

Integrate instruction into all vocational courses necessary to develop employability skills. Skills frequently mentioned by employers and educators include the following:

> Reading, writing, computing, expressing oneself, understanding instructions, interpersonal relationship skills, understanding of economics, punctuality, initiative, dependability, leadership skills, decision-making skills, problem solving, reasoning, conceptualizing, and analyzing skills.

(Boyer, 1983)
(Timm, 1983, Business/Industry Project)
(High Schools and the Changing Workplace, 1984)
(Parks & Henderson, 1984)
(Tennessee Task Force for Secondary Vocational Education, 1983)

Relevant Supporting Statement

> In addition to developing occupational skills, secondary vocational courses must develop self-esteem, positive attitudes toward work, safe work habits, job-seeking skills, and other general employability skills.
>
> (The Unfinished Agenda, 1984, p. 26)

Recommendation #12

Integrate the teaching of the required "Basics" into vocational programs in such practical application courses as "Understanding and Making Use of Technology", "Applied Sciences", "Consumer Homemaking", etc. Focus on methods and strategies to close the gap between vocational education requirements and high school graduation requirements. Consider various implementation methods such as integrated, nonintegrated, and combination models.

Relevant Supporting Statements

> Surely we can do better to integrate the basic skills of language, reasoning and problem solving, mathematics, natural and social sciences with the content of vocational programs. Surely the teachers of subjects in the New Basics and those responsible for vocational curricula can find better ways to meld their efforts on behalf of their students.
>
> (Bell, 1984, p. 34)

> There is evidence that occupationally relevant instruction can make learning more meaningful, especially for those students who are bored and frustrated in the typical academic classroom. To realize this outcome, specific instruction in communication and computational skills will have to be integrated into regular vocational offerings.
>
> (Lewis, 1984, p. xii)

Recommendation #12 continued:

> In virtually every occupational area, vocational programs teach abstractions by having students interact with the ideas in tangible, useful ways. In vocational classrooms, math and science and English are not taught in an artificial environment; they are taught when they are needed to do practical tasks. The relevance of this basic academic knowledge becomes obvious to students when a real-world problem cannot be solved without being able to use and understand these subjects.
>
> (Pucel, 1984, p. 44)

> Secondary vocational education courses should provide instruction and practice in the basic skills of reading, writing, arithmetic, speaking, listening, and problem-solving. This addresses the current demand for the new basics without locking all students into the academic classroom.
>
> Students should be allowed to satisfy some requirements for high school graduation—for example in the areas of mathematics, science, English, or social studies—with selected courses in areas of vocational education that are comparable in content coverage and rigor.
>
> (The Unfinished Agenda, 1984, pp. 25-26)

Suggested Models for Study:

Virginia State Education Department (Brown, 1984)

New York State Education Department (Daggett, 1984)

Building Basic Skills: Models for Implementation (1984)

Recommendation #13

Establish programs which include both group and individualized counseling concerning students' career choices.

(Boyer, 1983)

(Tennessee Task Force for Secondary Vocational Education, 1983)

(The Unfinished Agenda, 1984)

Special Resources/Methods for Effective Program Implementation

Recommendation #14

Develop comprehensive, in-service activities for implementing new and/or revised programs (e.g., technology education and occupationally related mathematics and science programs).

(Daggett, 1984)

Recommendation #15

Develop systematic methods of involving the almost 400 business leaders who expressed interest on the Metro Schools' Employment & Training Needs survey in working with educational agencies in one or more of the following capacities:

a) Curriculum Development

b) Work/Study placement

c) Job Placement

d) On-the-job training source

Develop a system/model for making regular contacts with businesses and for establishing ongoing involvements that benefit business/industry, the school system, and, of most importance, the secondary students.

Recommendation #16

Develop small-scale, experimental programs to facilitate transfer of new and emerging skills training to the schools. Such pilot projects could range from major curricular modifications to efforts to increase scheduling flexibility.

(Flynn, 1984)

(Parks & Henderson, 1984)

Recommendation #17

Develop and implement an ongoing, evaluation model(s) for Metro Schools' vocational programs. Add, revise, or eliminate programs based on occupational data, feedback from employers and students (past and current), placement data, achievement/competency testing, etc.

(Alexrod, 1984)
(Gonzales, 1985)
(Hunter, 1985)
(Miller, 1985)
(Tennessee Task Force for Secondary Vocational Education, 1983)

To answer the question "What kind of training do today's vocational education students need?", economists and business analysts say that students need advanced skills and technical training to help them adapt to the rapidly changing job market. Supposedly, employers throughout the nation cite a shortage of workers with marketable skills. Yet some observers caution that high-tech careers are being oversold. In fact, of the 31 occupations the Bureau of Labor Statistics says will provide the greatest number of new jobs by 1990, only 5 will require a college degree. According to Bottoms (1984) secondary vocational education will be the crucial launching point for entering employment or going on to more advanced preparation in the other 26 jobs. With such mixed signals coming from analysts, schools are under pressure to offer as wide a range of programs as possible.

Indications are that Nashville and the surrounding areas will continue to expand economically and will continue to diversify their industrial and business base. The contributions of Metro Public Schools in supplying a well trained labor pool are essential to expanding new companies and to the health of the economy of the area. Too, surveys of employers, both locally and nationally, indicate a greater willingness to cooperate with vocational education than had formerly been realized. However, as Lewis (1984) warns, vocational educators will have to be cautious that they do not let involvement with employers divert them from their primary goal of development of the individual.

While today's students must prepare for a future world of work that is essentially unknown, some reformers vow to set up a more rigid set of standards for the new generation of students. Santo (1984) points out that the problem is that students are not all alike. Furthermore, "rigidity is a maladaptive response to change. How will a narrower curriculum serve us in the most rapidly changing economy and society we have ever known?" (p. 25).

The Carngegie Report (Boyer, 1983) stated that schooling should prepare all students for a life of work and learning. The essential foundations for such preparation must include the basic skills, a common core of learning, a cluster of elective courses, and student assessment and counseling to smooth the transition to jobs and higher education. The Carnegie committee specifically recommended that the last two years of high school be considered a "transition school" where half the time is devoted to completing the common core courses and the other half to a program of "elective clusters" (p. 128).

As Terrell Bell (1984), former Secretary of Education, has written, "I see no conflict in our advocacy of excellence in academic education at the elementary and secondary levels and our commitment to a strong system of vocational education in our secondary and postsecondary schools" (p. 33).

There are several indications that innovations are occurring which show recognition of vocational education's critical role in the development of the elementary and secondary student. In at least 20 states, vocational courses can now be counted toward completion of some graduation requirements in math, science, or English (Bottoms, 1984). State boards of education in 28 states are in the process of developing a curriculum in which a unified concept of physics is taught in terms of modern workplace applications.

In Virginia, vocational and academic courses will be coordinated so that students are required to apply academic knowledge and skills to job tasks. Every student will have to earn passing grades in two, one-year high school vocational courses in order to graduate (Hunter, 1985). Another benefit of vocational education is more widely recognized since research findings have been released which show that, with everything else being equal, the more vocational education that students have, the less likely they are to drop out of school (Desy, Campbell, & Gardner, 1984).

To give students the skills they need to survive and prosper means that the challenge facing vocational education is to prepare students for the unknown future (Rumberger, 1984). A major goal of secondary vocational planners should include the development of broad, transferable skills in students which will enable them not only to enter but to progress in the world of work or in higher educational institutions and to derive satisfaction in their attainment of personal goals (Lewis, 1984).

REFERENCES

REFERENCES

Action for excellence. Task Force on Education for Economic Growth, Education Commission of the States. Denver, Colorado: A. B. Hirschfield Press, 1983.

1985 annual planning information. Tennessee Department of Employment Security, Research and Statistics Division, 1985.

Axelrod, Valija. Employers' Expectations of Vocational Education. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984. (ERIC Digest #34)

Basics, update 1981-82. Metropolitan Nashville Board of Public Education, Publication Committee, 1982.

Basics, update 1982-83. Metropolitan Nashville Board of Public Education, Publication Committee, 1983.

Basics, 1984-85. Metropolitan Nashville Board of Public Education, Department of Research and Evaluation and Department of Communications and Community Relations, 1985.

Baxter, N. The economy in 1995. Occupational Outlook Quarterly, 1984, 28 (1), 27-30.

Bell, T. H. Vocational education and the education reform movement. VocEd: Journal of the American Vocational Association, 1984, 59 (7), 33-34.

Bienstock, H. New and emerging occupations: Fact or fancy? Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1981.

Bottoms, G. Now is the moment of opportunity. VocEd: Journal of the American Vocational Association. 1984, 59 (7), 8-9.

Boyer, E. L. High school: A report on secondary education in America. The Carnegie Foundation for the Advancement of Teaching. New York: Harper & Row, 1983.

Brown, K. The vocational approach to math and science. VocEd: Journal of the American Vocational Association, 1984, 59 (7), 35-36.

Building basic skills: Models for implementation. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984.

Business information directory. Nashville, Tennessee: White Directory Publishers, 1981.

Campbell, P. B., Gardner, J. A., & Winterstein, P. Transition patterns between education and work. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984.

REFERENCES continued:

Civilian labor force occupations. Nashville Area Chamber of Commerce, Source: U. S. Department of Commerce, Census of Population, 1980.

Council for employment needs and training (CENT). Battle Creek, Michigan: Kellogg Community College, 1981.

Crain, R. L. *The quality of American high school graduates: What personnel officers say and do about it.* Baltimore, Maryland: Center for Social Organization of Schools, Johns Hopkins University, 1984.

Cummings, J. Tennessee Department of Employment Security, Research and Statistics Division, Personal Communication, October, 1984.

Daggett, W. R. *Program directions for occupational education in New York State.* A Position Paper, New York State Education Department, Division of Occupational Education Programs, 1984.

Desy, J., Campbell, P. B., & Gardner, J. A. *High school vocational education experiences: In school and in the labor market.* Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984.

Dickerson, W. We need the area vo-techs more than ever. *VocEd: Journal of the American Vocational Association*, 1984, *59* (6), 17.

Dyrenfurth, M. J. State trends in graduation requirements. *VocEd: Journal of the American Vocational Association*, 1985, *60* (1), 43-46.

Flynn, P. M. "Training cycles" in occupational preparation. *VocEd: Journal of the American Vocational Association*, 1984, *59* (7), 20-22.

Fountain, M. C. (Ed.). Emerging occupations: Not every acorn becomes an oak. *Occupational Outlook Quarterly*, 1982, *26* (3), 12-13.

Frugoli, P. L. *An introduction to using an occupational information system: Reference for program planning.* National Occupational Information Coordinating Committee, National Governors Association, Center for Policy Research, 1983.

Gallup, G. H. The 15th annual gallup poll of the public's attitude toward the public schools. *Phi Delta Kappan*, 1983, pp. 33-47.

Gonzalez, E. Voc Ed: Does it have a future? *NEA Today*, 1985, *3* (4), 12-13.

Gray, K. E., Russell, E. B., Cruz, V. R., & Stahura, J. M. *A needs assessment of employment demands/interests for Nashville - Davidson County Metropolitan Public Schools.* Columbus, Ohio: Center for Vocational Education, Ohio State University, 1975.

Groff, W. H. *Strategic issues in research and program planning.* Paper presented at the American Vocational Association, December, 1984.

REFERENCES continued:

High schools and the changing workplace. Washington, D.C.: National Academy Press, 1984.

Hunter, R. C. A school board sets its sights high. VocEd: Journal of the American Vocational Association, 1985, 60 (1), 38-39.

Kadamus, J. A. New York redefines excellence. VocEd: Journal of the American Vocational Association, 1984, 59 (8), 42-44.

The labor market report. Tennessee Department of Employment Security, U.S. Department of Labor, November, 1983.

Lemons, C. D. Education and training for a technological world. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State Universtiy, 1984.

Lewis, M. V. Future research and strategic planning: Some personal observations. Paper presented to the American Vocational Association, December, 1984.

Lewis, M. V., & Fraser, J. L. Taking stock of national trends. VocEd: Journal of the American Vocational Association, 1984, 59 (4), 26-28.

Lindeman, A. Arizona: A reform in progress. VocEd: Journal of the American Vocational Association, 1985, 60 (1), 36-37.

Maxwell, G. W., & West, L. N. Handbook for developing competency-based curricula for new and emerging occupations. San Jose, California: San Jose State University, 1980. (ERIC Document Reproduction Service No. ED 210 518)

Meeting future job skills requirements in Tennessee. Job Skills Task Force. Report to Governor Lamar Alexander, 1982.

Miller, S. Voc ed has some good friends in Jacksonville. VocEd: Journal of the American Vocational Association, 1985, 60 (1), 34-35.

Naisbitt, J. Megatrends. New York: Warner Books, 1982.

Nardone, T. The job outlook in brief. Occupational Outlook Quarterly, 1984, 28 (1), 3-25.

Nashville business directory. Nashville Area Chamber of Commerce and Plus Media, Inc., 1982.

A nation at risk: The imperative for educational reform. The National Commission of Excellence in Education, U. S. Department of Education, 1983.

A nation at work: Education and the private sector. Report prepared by the National Advisory Council on Vocational Education. Washington, D.C.: National Alliance of Business, 1984.

REFERENCES continued:

Occupational outlook handbook. U. S. Department of Labor, Bureau of Labor Statistics. Washington, D.C.: Government Printing Office, 1982.

Orth, M. N. & Russell, J. F. Curriculum development needs for vocational education: New and changing occupations. Columbus, Ohio: Ohio State University, National Center for Research in Vocational Education, 1980. (ERIC Document Reproduction Service No. ED 198 256)

Parker Project. Parker Fund of the Janesville Foundation and Wisconsin Department of Public Instruction, 1983.

Parks, D. L. & Henderson, G. H. An agenda for action. VocEd: Journal of the American Vocational Association, 1984, 59 (7), 37-39.

Personick, V. A. The job outlook through 1995: Industry output and employment projections. Monthly Labor Review, 1983, 106 (11), 24-36.

Pucel, D. J. An alternative approach to learning. VocEd: Journal of the American Vocational Association, 1984, 59 (7), 42-44.

Rask, M. L. A nation at risk and people forgotten. Paper prepared for the Nevada Advisory Council for Vocational-Technical Education, October, 1983.

Report on education of the disadvantaged. Newsletter on Chapter 1 and Other Federal Programs for Disadvantaged Children, 1985, 18 (5), 1.

Riche, R. W., Hecker, D. E., and Burgan, J. U. High technology employment: Fast growth but few jobs. Occupational Outlook Quarterly, 1984, 28, 31-36.

Richman, T. Peering into tomorrow. INC., October, 1982, 45-48.

Rosenthal, N. H. & Pilot, M. National occupational projections for voc ed planning. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1983.

Rumberger, R. W. How much "tech" do high-tech workers need? VocEd: Journal of the American Vocational Association, 1984, 59 (4), 32-34.

Russell, J. F. Implications of new and changing occupations for instructional development. Columbus, Ohio: Ohio State University, National Center for Research in Vocational Education, 1981. (ERIC Document Reproduction Service No. ED 198 260)

Santo, G. B. High school: What about voc ed? VocEd: Journal of the American Vocational Association, 1984, 59 (7), 25.

Sherman, S. W. (Ed.). Education for tomorrow's jobs. Washington, D.C.: National Adademy Press, 1983.

REFERENCES continued:

Survey of Business. Knoxville, Tennessee: University of Tennessee, College of Business Administration, Center of Business and Economic Research, 1983.

Tennessee comprehensive education study. Tennessee Commission on Education, Tennessee Department of Education, 1982, p. 44.

Tennessee employment projections, 1984-1990 - Statewide, Tennessee Department of Employment Security, Research and Statistics Division, April, 1984.

Tennessee employment projections, 1984-1990 - Service delivery areas. Tennessee Department of Employment Security, Research and Statistics Division, September, 1984, p. 55.

Tennessee task force for secondary vocational education. Tennessee Department of Education, 1983.

Timm, W. H., Jr. Business/industry linkage project. Tennessee Department of Education, 1983.

The Unfinished Agenda. Columbus, Ohio: The National Center for Research in Vocational Education, Ohio State University, 1984.

APPENDIX A

Survey Instrument

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

METROPOLITAN NASHVILLE DAVIDSON COUNTY EMPLOYMENT & TRAINING NEEDS SURVEY

Report entry level jobs (full time or full time equivalent) by occupations.
Do not report professional or managerial jobs requiring college degrees

Name of Company ______________________
Address of Company ______________________
Principal Product or Service ______________________
Total # of employees ______________________

Name and title of person completing form ______________________
Name of Personnel Director ______________________
Name of Interviewer ______________________ Date ________

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number now employed	2. Number vacancies		3. Estimated number needed in next three (3) years		4. Is this a: (check all which apply)			5. Education & training requirements for entry level (check all which apply)							6. Would you be interested in working with local educational institutions and service agencies? (check all which apply)			
		Current	Projected openings in one (1) year	Expansion	Replacement	Hard to fill job?	High Turnover job?	New Emerging job?	No diploma required	High school diploma GED	Vocational Curriculum Secondary (9-12)	Vocational Curriculum Post Secondary (13-14)	Technical 2 year degree	Apprenticeship	On-the-job	To develop curriculum for training	To develop on-the-job, intern, pre-apprenticeship and non-paid work experience programs	To develop on-site class training to upgrade skill level of employees	As a placement source for trained employees or cooperative education students
CONSTRUCTION CRAFTS WORKERS																			
0101 bulldozer operators																			
0102 carpenters																			
0103 electricians																			
0104 excavating & grading machine operators																			
0105 painters, construction & maintenance																			
0106 plumbers and pipe fitters																			
0107 brickmasons, stonemasons																			
0108 other construction crafts workers																			
0109																			
METAL CRAFTS WORKERS, EXCEPT MECHANICS																			
0201 job and die setters, metal																			
0202 machinists																			
0203 millwrights																			
0204 molders, metal																			
0205 sheetmetal workers and tinsmiths																			
0206 tool and die makers																			
0207 other metal crafts workers																			
0208																			
MECHANICS, REPAIRERS AND INSTALLERS																			
0301 automobile body repairers																			
0302 automobile mechanics																			
0303 heavy equipment mechanics, including diesel aircraft																			
0304 household appliance mechanics																			
0305 air conditioning, heating repairers & installers																			
0306 other mechanics, repairers & installers																			
0307																			
PRINTING TRADE CRAFTS WORKERS																			
0401 compositors and typesetters																			
0402 printing press operators																			
0403 photoengravers, lithographers																			
0404 photographers																			
0405 other printing crafts workers																			
0406																			
TRANSPORTATION AND PUBLIC UTILITY CRAFTS																			
0501 telephone installers and repairers																			
0502 other transportation and utility workers																			
0503																			
OTHER CRAFTS AND KINDRED WORKERS																			
0601 inspectors, other																			
0602 stationary engineers																			
0603 sound recording technicians																			
0604 other crafts and kindred workers																			

METROPOLITAN PUBLIC SCHOOLS • NASHVILLE-DAVIDSON COUNTY, TENNESSEE • CHARLES O. FRAZIER, DIRECTOR

VOCATIONAL EDUCATION EXEMPLARY PROJECT

METROPOLITAN NASHVILLE DAVIDSON COUNTY
EMPLOYMENT & TRAINING NEEDS SURVEY

Report entry level jobs (full time or full time equivalent) by occupations.
Do not report professional or managerial jobs requiring college degrees

Name of Company ____________________
Address of Company ____________________
Principal Product or Service ____________________
Total # of employees ____________________

Name and title of person completing form ____________________
Name of Personnel Director ____________________
Name of interviewer ____________________ Date ____

OPERATIVES OCCUPATIONS (Entry Level)	1. Number now employed	2. Number vacancies		3. Estimated number needed in next three (3) years		4. Is this a: (check all which apply)			5. Education & training requirements for entry level (check all which apply)							6. Would you be interested in working with local educational institutions and service agencies? (check all which apply)			
		Current	Projected openings in one (1) year	Expansion	Replacement	Hard to fill job?	High Turn-over job?	New Emerging job?	No diploma required	High school diploma (GED)	Vocational Curriculum Secondary (9-12)	Vocational Curriculum Post Secondary (13-14)	Technical 2 year degree	Apprenticeship	On-the-job	To develop curriculum for training	To develop on-the-job, intern, pre-apprenticeship and non-paid work experience programs	To develop on-site class training to upgrade skill level of employees	As a placement source for trained employees or cooperative education students
SEMISKILLED METAL WORKING																			
0701 drill press operatives																			
0702 furnace tenders, smelters & pourers																			
0703 grinding machine operatives																			
0704 lathe and milling machine operatives																			
0705 punch and stamping press operatives																			
0706 welders and flame cutters																			
0707 other semiskilled metalworking operators																			
0708																			
SEMISKILLED PACKING AND INSPECTING OPERATORS																			
0801 checkers, examiners and related manufacturing																			
0802 packers and wrappers, except meat and produce																			
0803 other semiskilled packing & inspecting operators																			
0804																			
OTHER OPERATIVES, EXCEPT TRANSPORT																			
0901 assemblers																			
0902 cutting operatives, other																			
0903 filers, polishers, sanders & buffers																			
0904 garage workers and gas station attendants																			
0905 laundry & dry cleaning operatives, other																			
0906 meat cutters and butchers, except manufacturing																			
0907 painters, manufactured articles																			
0908 other machine operatives																			
0909 other operatives																			
0910																			
TRANSPORT EQUIPMENT OPERATIVES																			
1001 bus drivers																			
1002 delivery and route workers																			
1003 forklift and tow motor operatives																			
1004 railroad brake operators and couplers																			
1005 truck drivers																			
1006 other transport equipment operatives																			

METROPOLITAN PUBLIC SCHOOLS · NASHVILLE/DAVIDSON COUNTY, TENNESSEE · CHARLES O. FRAZIER, DIRECTOR

VOCATIONAL EDUCATION EXEMPLARY PROJECT

METROPOLITAN NASHVILLE DAVIDSON COUNTY EMPLOYMENT & TRAINING NEEDS SURVEY

Report entry level jobs (full time or full time equivalent) by occupations
Do not report professional or managerial jobs requiring college degrees

Name of Company ____________________
Address of Company ____________________
Principal Product or Service ____________________
Total # of employees ____________________

Name and title of person completing form ____________________
Name of Personnel Director ____________________
Name of interviewer ____________________ Date ________

SERVICE OCCUPATIONS (Entry Level)	1. Number now employed	2. Number vacancies		3. Estimated number needed in next three (3) years		4. Is this a: (check all which apply)			5. Education & training requirements for entry level (check all which apply)							6. Would you be interested in working with local educational institutions and service agencies? (check all which apply)			
		Current	Projected openings in one (1) year	Expansion	Replacement	Hard to fill job?	High Turnover job?	New Emerging job?	No diploma required	High school diploma GED	Vocational Curriculum Secondary (9-12)	Vocational Curriculum Post Secondary (13-14)	Technical 1 year degree	Apprenticeship	On-the-job	To develop curriculum for training	To develop on-the-job, intern, pre-apprenticeship and non-paid work experience programs	To develop on-site class training to upgrade skill level of employees	As a placement source for trained employees or cooperative education students
CLEANING SERVICE WORKERS																			
1101 building interior cleaners, other																			
1102 janitors and sextons																			
1103 lodging quarters cleaners, except private																			
1104 private household cleaners and servants																			
1105																			
FOOD SERVICE WORKERS																			
1201 bartenders																			
1202 cooks, chefs, except private household																			
1203 dishwashers																			
1204 food counter and fountain workers																			
1205 waiters, waitresses																			
1206 waiters, waitresses, assistants																			
1207 other food service workers, except private																			
1208																			
HEALTH SERVICE WORKERS																			
1301 dental assistants																			
1302 health aides, except nursing																			
1303 nursing aides, orderlies and attendants																			
1304 practical nurses																			
1305 other health workers																			
1306																			
PERSONAL SERVICE WORKERS																			
1401 barbers																			
1402 child care workers																			
1403 hairdressers and cosmetologists																			
1404 housekeepers, except private household																			
1405 school monitors																			
1406 recreation & amusement attendants																			
1407 other personal service workers																			
1408																			
PROTECTIVE SERVICE WORKERS																			
1501 fire fighters																			
1502 guards																			
1503 police and detectives																			
1504 other protective service workers																			
1505																			
LABORERS																			
1601 construction laborers, other																			
1602 farm laborers																			
1603 freight and material handlers																			
1604 gardeners and groundskeepers, except farm																			
1605 stock handlers																			
1606 vehicle washers and equipment cleaners																			
1607 other laborers																			

METROPOLITAN PUBLIC SCHOOLS · NASHVILLE-DAVIDSON COUNTY, TENNESSEE · CHARLES O. FRAZIER, DIRECTOR

VOCATIONAL EDUCATION EXEMPLARY PROJECT

METROPOLITAN NASHVILLE DAVIDSON COUNTY EMPLOYMENT & TRAINING NEEDS SURVEY

Report entry level jobs (full time or full time equivalent) by occupations.
Do not report professional or managerial jobs requiring college degrees

Name of Company ____________
Address of Company ____________
Principal Product or Service ____________
Total # of employees ____________

Name and title of person completing form ____________
Name of Personnel Director ____________
Name of Interviewer ____________ Date ____________

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number now employed	2. Number of vacancies		3. Estimated number needed in next three (3) years		4. Is this a: (check all which apply)			5. Education & training requirements for entry level (check all which apply)								6. Would you be interested in working with local educational institutions and service agencies? (check all which apply)			
		Current	Projected openings in one (1) year	Expansion	Replacement	Hard to fill job?	High Turnover job?	New Emerging job?	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	To develop curriculum for training	To develop on-the-job, intern, pre-apprenticeship and non-paid work experience programs	To develop on-site class training to upgrade skill level of employees	As a placement source for trained employees or cooperative education students
SALES WORKERS																				
1701 insurance agents, brokers and related																				
1702 real estate agents and brokers																				
1703 sales clerks and sales workers																				
1704																				
CLERICAL AND KINDRED WORKERS																				
1801 bank tellers																				
1802 bookkeepers																				
1803 cashiers																				
1804 clerical supervisors																				
1805 computer and peripheral equipment operators																				
1806 counter clerks, except food																				
1807 estimators and investigators																				
1808 expediters and production controllers																				
1809 file clerks																				
1810 insurance adjusters and examiners																				
1811 keypunch operators																				
1812 library attendants and assistants																				
1813 payroll and timekeeping clerks																				
1814 postal clerks																				
1815 receptionists																				
1816 secretaries and stenographers																				
1817 medical secretaries																				
1818 shipping and receiving clerks																				
1819 statistical clerks																				
1820 stock clerks and storekeepers																				
1821 teacher aides, except school monitors																				
1822 telephone operators																				
1823 typist, word processors																				
1824 other office machine operators																				
1825																				
1826 other secretarial workers																				
1827																				
1828 other clerical workers																				

METROPOLITAN PUBLIC SCHOOLS • NASHVILLE-DAVIDSON COUNTY, TENNESSEE • CHARLES O. FRAZIER, DIRECTOR

VOCATIONAL EDUCATION EXEMPLARY PROJECT

APPENDIX B

Correspondence

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

SAMPLE

The Metropolitan Nashville-Davidson County School System is involved in a project to develop "Unity For A Quality Vocational Delivery System In The Metro Nashville Community". The success of this project is highly dependent upon the cooperation of businesses within Nashville and surrounding areas.

In the near future, your company will receive a call from an employee of the Metropolitan Public Schools, requesting an interview with a company administrator. The purpose of this interview will be to determine employment and training needs of Nashville and surrounding counties. A goal of the school system is to provide training programs that are relevant and compatible with current and future employer needs. To accomplish our goal, we need information from those who employ our graduates. An analysis of manpower supply and future demands is vital to future planning, development and/or modification of our current vocational education programs.

We realize that company administrators are busy persons and that their time is very valuable. We hope, nevertheless, that your company is willing to offer assistance especially when it will possibly better utilize tax dollars in planning appropriate educational programs that will provide employment guidance for students and better serve the needs of the community.

The time required to complete this survey should not take more than twenty to thirty minutes. Copies of the survey forms to be used are enclosed so that you will be familiar with the information we are seeking.

We look forward to working with you.

Sincerely,

Charles O. Frazier

Charles O. Frazier

COF:dh

Enclosure

P.S. YOU CAN EXPECT A CALL FOR AN INTERVIEW APPOINTMENT SOON.

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

SAMPLE

The Metropolitan Nashville-Davidson County School System is involved in a project to develop "Unity For A Quality Vocational Delivery System In The Metro Nashville Community". The success of this project is highly dependent upon the cooperation of businesses within Nashville and surrounding areas.

Your association cooperated with the Metropolitan Public Schools in 1976 in response to a survey of employment projections in the Metro area. The information gained from the survey was used at that time in identifying vocational education programming offered in the Metro Schools. A similar survey is being conducted during July and the first week in August in an attempt to provide current employer projections.

A goal of the school system is to provide training programs that are relevant and compatible with current and future manpower demands. To accomplish our goal, we need information from those who employ our graduates. An analysis of manpower supply and demands is vital to future planning, development and/or modification of our current vocational education programs.

So that we might survey as many businesses as possible, would you provide the Metro Schools with an address listing, contact persons and phone numbers, of businesses of your association in the Metro Nashville area. A random sampling survey will be conducted of various businesses/industry you identify, specifically those which provide direct linkage to our vocational programs.

A copy of the survey questionnaire is enclosed. Please call if we may come by for the listing or if you prefer, mail the listing at your earliest convenience to: Dan A Covington, Project Director
Vocational Education Exemplary Project
Crieve Hall School
498 Hogan Road
Nashville, Tennessee 37220
Telephone--832-2550 or 832-2669

Sincerely,

Charles O. Frazier

Charles O. Frazier

COF:dh

Enclosure

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

March 21, 1983

SAMPLE

Mr. Victor Baggett, Coordinator
Adult Vocational Education
Hume Fogg High School
Nashville, Tennessee 37203

Dear Mr. Baggett:

The Metro Public School System is involved in a project to provide continuity in our vocational programs and to open lines of communication between those institutions and agencies which provide post-secondary vocational education services. We are actively soliciting input from business and industry to assist us in program planning and employment projections. Our project is a massive undertaking, involving many activities.

The first phase of our Project has addressed horizontal articulation of vocational programs in the Metro Schools. An Employment and Training Needs Survey has been conducted involving more than 2000 businesses in the Nashville area. An extensive curriculum effort has begun involving over ninety of our vocational instructors to identify those competencies they feel should be taught in each vocational program area. A long-range sex equity plan has been developed. Many public relations activities have been undertaken to promote vocational education and to help youngsters in their career decision making.' Active program advisory committees have been organized to impact program planning and development.

Our Project staff is prepared for second phase activities that will enhance vertical articulation of Metro's vocational programs with public and private post-secondary institutions in our area. We will be seeking advice and assistance from your instituion regarding the following activities:

(1) Articulation assessment
(2) Review of our curriculum efforts and ideas from your institution regarding the competencies Metro Schools should be teaching
(3) Development of a comprehensive brochure for our graduates detailing each post-secondary institution and training in our area
(4) Formal agreement with both public/private instituitons to work together and initiate meetings for this purpose

Enclosed is a status report of our Project and a copy of our Employment and Training Needs Survey.

Sincerely yours,

Dan A. Covington, Project Director
Vocational Education Exemplary Project

DAC/jd

Enclosures

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

June 7, 1982

MEMORANDUM

TO: Cooperative Vocational Education Instructors
and Guidance Counselors

FROM: Dan A. Covington Dan

RE: Employment and Training Needs Survey

As part of Metro Schools' Exemplary Vocational Project entitled "Unity for a Quality Vocational Delivery System in the Metro Nashville Community", we are analyzing manpower supply and demand within our community and surrounding counties.

To meet this goal we will be conducting an employer survey of businesses within our community. The survey will be four pages and asks employers to respond to many questions regarding employment projections, both current and long range. As you are aware, such projections serve as the basis for vocational programming and assist in future employment/placement of our graduates. Data will be invaluable to guidance, cooperative education placement and vocational education planning.

We are proposing to conduct the employer survey on a personalized basis to assure maximum return and true employment projections. We would like your assistance in conducting the survey if your schedule permits.

If you would like to be a part of this effort, please complete the attached and mail it immediately. You will have to have an automobile and you will be trained for the interview. Additional details are outlined on the attached.

cc: Dorothy Pease
E. C. Miller
Kenneth Anderson

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

SAMPLE

July 8, 1982

Mr. Stephen Harding, Executive Vice President
Tennessee Association of Realtors
1910 Adelicia Street
Nashville, Tennessee 37212

Dear Mr. Harding:

The Metropolitan Nashville-Davidson County School System is involved in a project to develop "Unity For A Quality Vocational Delivery System In The Metro Nashville Community". The success of this project is highly dependent upon the cooperation of businesses within Nashville and surrounding areas.

Your association cooperated with the Metropolitan Public Schools in 1976 in response to a survey of employment projections in the Metro area. The information gained from the survey was used at that time in identifying vocational education programming offered in the Metro Schools. A similar survey is being conducted during July and the first week in August in an attempt to provide current employer projections.

A goal of the school system is to provide training programs that are relevant and compatible with current and future manpower demands. To accomplish our goal, we need information from those who employ our graduates. An analysis of manpower supply and demands is vital to future planning, development and/or modification of our current vocational education programs.

So that we might survey as many businesses as possible, would you provide the Metro Schools with an address listing, contact persons and phone numbers, of businesses of your association in the Metro Nashville area. A random sampling survey will be conducted of various businesses/industry you identify, specifically those which provide direct linkage to our vocational programs.

A copy of the survey questionnaire is enclosed. Please call if we may come by for the listing or if you prefer, mail the listing at your earliest convenience to:

Dan A Covington, Project Director
Vocational Education Exemplary Project
Crieve Hall School
498 Hogan Road
Nashville, Tennessee 37220
Telephone--832-2550 or 832-2669

Sincerely,

Charles O. Frazier

Charles O. Frazier

COF:dh

Enclosure

PHASE IV

Associations and Agencies Contacted

Tennessee Manufacturers Association
501 Union
Nashville, TN 37219
Carter Witt, President
256-5141

Tennessee Retail Merchants Association
Tennessee Building
Nashville, TN 37219
Stephen Boyer, President
242-5111

Nashville Building & Construction Trades Council
631 N. First Street, Room 105A
Nashville, TN 37207
Leonard Wills, Coordinator
256-8469

Tennessee Hospital Association
500 Interstate Boulevard, South
Nashville, TN 37210
Ira Lane, President
256-8240

Nashville/Mid Tenn Home Builders Association
620 N. First
Nashville, TN 37207
Mel Arnold, President
244-7814

Associated Builders & Contractors
P. O. Box 40194
Nashville, TN 37204
Robert Melton, President
385-0442

Tennessee Building Materials Association
4711 Trousdale Drive
Nashville, TN 37211
Stan Owens, Executive Vice President
833-7654

Mid South Hardware Association
95 White Bridge Road, Suite 119
Nashville, TN 37205
Jack Davis, Manager
352-6742

Tennessee Hotel & Motel Association
230 4th Avenue, North
Nashville, TN 37219
Erma Choate, Executive Director
244-6685

Tennessee Restaurant Association
229 Court Square #207
Franklin, TN 37064
Ronnie Hart, Executive Vice President
790-2703

Tennessee Road Builders Association
217 6th Avenue, N.
Nashville, TN 37219
Donald Powelson
255-5751

Air Condition Contractors Association
P. O. Box 40076
Nashville, TN 37204
Robert A. Grimm
834-1618

Nashville Apartment Owners Association
620 N. First Street
Nashville, TN 37207
Pat Carter
244-1100

Nashville Electric Contractors Association
1909 12th Avenue, South
Nashville, TN 37203
William J. Conley
383-7051

Country Music Association
P. O. Box 22299
Nashville, TN 37203
Jo Walker-Meador
244-2840

Central Tennessee Professional Florist Association
4401 Westlong Drive
Nashville, TN 37209
Boot Bowers c/o Geny's Wholesale
297-5305

Farm Bureau Office, Davidson County
1122 2nd Avenue, North
Nashville, TN 37208
Sparky Foster, Manager

Mechanical Contractors Association
23 Music Circle East
Nashville, TN 37203
Leroy Brown
244-1851

Tennessee Dairy Products Association
1719 West End Building
Nashville, TN
Harold Rose, Executive Secretary
269-3236

Tennessee Dental Association
2104 Sunset Place
P. O. Box 120188
Nashville, TN 37212
Dr. William Manning, President
383-8962

Tennessee Retail Grocers Association
107 Music City Circle
Nashville, TN 37214
Wes Ball, Executive Director
889-0136

Tennessee Bar Association
3622 West End Avenue
Nashville, TN 37205
Billie Bethel, Executive Director
383-7421

Retail Gasoline Dealers Association
522 Robertson Road
Nashville, TN 37209
Craig Tucker, President Nashville Chapter
356-1891

Tennessee Automotive Association
2521 White Avenue
Nashville, TN 37204
R. N. Satterfield, Executive Director
269-3433

American Institute of Banking
833 J. C. Bradford Building
Nashville, TN 37219
Helen J. Phillips, Executive Director
242-1881

Automotive Wholesalers Association of Tennessee
95 White Bridge Road
Nashville, TN 37205
Keith Broyles, Executive Director
352-8600

Insurors of Tennessee
1412 Parkway Towers
Nashville, TN 37219
Jim Alexander, Executive Director
244-3421

National Federation of Independent Business
306 Gay Street
Nashville, TN 37201
Barry Stephenson, Director of Governmental Relations
244-3290

Professional Insurance Agents of Tennessee
107 James Robertson Parkway
Nashville, TN 37219
Kenny Marlow, Executive Director
259-9227

Southeast Independent Truckers Association
220 Old Hickory Boulevard
Nashville, TN 37221
Jack Mitchell, President
356-0335

Southern Motor Carriers
300 James Robertson Parkway
Nashville, TN 37201
255-4567

Tennessee Association of Broadcasters
Life & Casualty Tower
P. O. Box 2688
Nashville, TN 37219
Thomas R. King, Executive Director
254-5761

Tennessee Health Care Association
2809 Foster Avenue
P. O. Box 110113
Nashville, TN 37211
Richard T. Sadler, Executive Director
834-6520

Nashville Dental Society
2406 Gregory Drive
Nashville, TN 37216
Sarah Potts, Executive Secretary
228-0636

Tennessee Asphalt Paving Association
501 Union Suite 704
Nashville, TN 37219
Bob Boles, Executive Director
242-5404

Tennessee Association of Life Underwriters
500 Interstate Boulevard
P. O. Box 100745
Nashville, TN 37210
Chester B. Campbell, Executive Vice President
256-8258

Tennessee Association of Realtors
1910 Adelicia Street
Nashville, TN 37212
Stephen Harding, Executive Vice President
321-0515

Tennessee Bankers Association
L & C Tower - 21st
Nashville, TN 37219
Brad Barrett, Administrative Vice President
244-4871

Tennessee Medical Association
112 Louise Avenue
Nashville, TN 37203
Hadley Williams, Executive Director
327-1451

Tennessee Motor Transport Association
212 Capitol Boulevard
Nashville, TN 37219
Bob Pitts, Executive Vice President
255-0558

Tennessee Oil & Gas Association
5600 Brookwood Terrace
Nashville, TN 37205
Richard D. Jones, Executive Director
356-4240

Tennessee Oil Marketers Association
P. O. Box 23256
Nashville, TN 37202
Mrs. Elizabeth Walker, Executive Director
242-4377

Tennessee Savings & Loan League
226 Capitol Boulevard
Nashville, TN 37219
Bob Dudley Smith, Executive Vice President
244-7430

Tennessee Utility Contractors Association
4741 Trousdale Drive
Nashville, TN 37211
331-7057

Tennessee Wholesale Grocers Association
2932 Foster Creighton Drive
Nashville, TN 37204
Jeny Dunn, Executive Director
254-3520

123

Metropolitan Public Schools
2601 BRANSFORD AVENUE
NASHVILLE, TENN. 37204

October 25, 1982

SAMPLE

Mr. James Dixon
James E. Dixon Contractor
5319 Nolensville Road
Nashville, TN 37211

Dear Mr. Dixon:

Enclosed is a survey, with an attached instruction sheet, that addresses issues of great importance to both Industry and Education. This survey is being conducted by the Metropolitan Public Schools to determine employment and training needs of Nashville and surrounding counties.

An analysis of manpower supply and future demands is vital to future planning, development and/or modification of our current vocational education programs. A goal of the school system is to provide training programs that are relevant and compatible with employer needs. To accomplish our goal, we need information from those who employ Metropolitan Public Schools graduates.

We realize that company administrators are busy and their time is valuable. We hope, nevertheless, that your company is willing to offer assistance especially when it will possibly better utilize tax dollars in planning appropriate educational programs that will provide employment guidance for students and better serve the needs of the community.

We look forward to working with you.

Sincerely,

Charles O. Frazier

Charles O. Frazier

COF:dh

Enclosure

P. S. Please complete and mail the survey at your earliest convenience. A self-addressed stamped envelope is enclosed.

DEFINITION OF TERMS

APPRENTICESHIP TRAINING - Learning a trade by practical work experience while training under skilled workers.

COOPERATIVE EDUCATION (CO-OP) - A program of vocational education for persons who, through written cooperative arrangements between the school and employers, receive instruction, including required academic courses and related vocational instruction by alternation of study in school with a job in any occupational field.

ENTRY LEVEL - The beginning level at which the job requires the worker to function in certain occupations which offer employment opportunities with little or no previous work experience. Entry level occupations can be non-skilled, semi-skilled or skilled depending on training requirements. Professional or managerial jobs requiring college degrees are not considered as entry level.

INTERN, NON-PAID WORK EXPERIENCE, PRE-APPRENTICESHIP - Programs that permit students to receive training by observing and working under the direction of skilled workers for the purpose of learning work skills.

POSTSECONDARY - Schooling or training beyond high school grades, 13-14.

SECONDARY SCHOOL - High school, grades 9-12.

TECHNICAL TWO-YEAR DEGREE - A specialized course of study such as Electronics, Chemical Engineering, etc., rather than a broad general education that includes many areas of study over a longer period of time.

GENERAL INSTRUCTIONS

The top portion of the survey has been partially filled in. After you have completed the top portion, please assist us by identifying entry level occupations by job categories within your company. There are four broad categories with listings of specific occupations within these categories: Crafts & Kindred, Service, Operatives, and Sales & Clerical.

You are asked to report only those occupations within your company. If you have entry level occupations within these broad categories listed, but cannot identify by a specific job category, please include these in other or write them on the available blank lines.

Complete all four categories and return the yellow copies of the survey in the enclosed self-addressed postage paid envelope. You may retain the white copies for your files.

SPECIFIC INSTRUCTIONS

Response item

1. Report entry level jobs by occupations within your company (do not report managerial jobs or jobs requiring a college degree).
2. Report actual number of vacancies in entry level jobs, indicate current job openings and projected openings in one (1) year (if "0" please indicate).
3. Report estimated openings needed by your company in the next three years due to expansion and/or replacement (if "0" please indicate).
4. Check "✓" all that applies - is this job hard to fill? a new emerging job? or a combination of two or more of these?
5. Check "✓" the degree of training level(s) you require for entry level openings (check ALL that apply).
6. Your response in this area is very important to education in general and vocational education in particular. Check "✓" ALL categories in which you are willing to assist local Metro vocational personnel in planning and developing programs that will provide the entry level employee you need and want.

EMPLOYMENT & TRAINING NEEDS SURVEY

Company Name ______________________________

Address ______________________________

City ______________________________ Zip __________

Company Contact Person ______________________________

Telephone ______________________________

THIS IS TO ACKNOWLEDGE RECEIPT OF THE SURVEY.
PLEASE CHECK

_____ Our company will complete and mail the survey.

_____ Our company does not wish to participate in the survey.

If you have questions, please call Dan Covington or Connie Dabbs at 832-2550 or 832-2669.

Dear Employer:

Help!! We're looking for a missing EMPLOYMENT & TRAINING NEEDS SURVEY!

This message may be a little hard to read beca se the U is missing on o r typewriter. The other 44 keys are f nctioning properly b t one key makes a big difference. O r s rvey is m ch like the typewriter. If it is to be a meaningf l s rvey, yo r b siness needs to be incl ded. Please complete and ret rn the s rvey.

Your firm was selected as one of two thousand businesses in the greater Nashville area to be surveyed. We need your input to make our occupational preparation programs responsive to industry needs. Won't you help the Metro Schools in this endeavor. Please call 832-2550 if you have questions. Thank you.

APPENDIX C

Supplementary Tables

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

Table A

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

Entry Level Jobs—Data gathered from interviews and mailings involving 1,142 businesses in Metropolitan Nashville and surrounding counties.

Ranked according to number of additional entry level employees needed in next 3 years

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need next 3 yrs
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0100 Construction Crafts Workers	4,538(3.4)*	109	575	684(5.0)*	917	429	1,346(5.8)*	1
0200 Metal Crafts Workers, Except Mechanics	3,141(2.4)*	50	262	312(2.3)*	539	139	678(2.9)*	2
0400 Printing Trade Crafts Workers	3,868(2.9)*	40	203	243(1.8)*	330	187	517(2.2)*	3
0300 Mechanics, Repairers and Installers	4,097(3.1)*	132	181	313(2.3)*	204	175	379(1.6)*	4
0600 Other Crafts and Kindred Workers	2,131(1.6)*	14	138	152(1.1)*	256	95	351(1.5)*	5
0500 Transportation and Public Utility Crafts	921(0.7)*	8	12	20(0.1)*	51	5	56(0.2)*	6
TOTALS	18,696(14.1)*	353	1,371	1,724(12.5)*	2,297	1,030	3,327(14.4)*	
GRAND TOTALS for all entry level jobs	132,736	3,545	10,270	13,815	10,090	12,986	23,076	

* Percent of GRAND TOTALS

Table B

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

Entry Level Jobs—Data gathered from interviews and mailings involving 1,142 businesses in Metropolitan Nashville and surrounding counties.

Ranked according to number of additional entry level employees needed in next 3 years

OPERATIVES OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0900 Other Operatives, Except Transport	15,685(11.8)*	154	1,316	1,470(10.6)*	2,407	1,378	3,785(16.4)*	1
0800 Semiskilled Packing and Inspecting Operators	3,299(2.5)*	30	351	381(2.8)*	529	279	808(3.5)*	2
1000 Transport Equipment Operatives	4,583(3.5)*	96	314	410(3.0)*	313	414	727(3.2)*	3
0700 Semiskilled Metal Working	4,419(3.3)*	82	275	357(2.6)*	442	259	701(3.0)*	4
TOTALS	27,986(21.1)*	362	2,256	2,618(19.0)*	3,691	2,330	6,021(26.1)*	
GRAND TOTALS for all entry level jobs	132,736	3,545	10,270	13,815	10,090	12,986	23,076	

---

* Percent of GRAND TOTALS

Table C

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

Entry Level Jobs—Data gathered from interviews and mailings involving 1,142 businesses in Metropolitan Nashville and surrounding counties.

Ranked according to number of additional entry level employees needed in next 3 years

SERVICE OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need next 3 yr
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1200 Food Service Workers	10,731(8.1)*	225	1,921	2,146(15.5)*	1,340	3,839	5,179(22.4)*	
1600 Laborers	8,197(6.2)*	248	936	1,184(8.6)*	711	817	1,528(6.6)*	
1300 Health Service Workers	9,646(7.3)*	365	496	861(6.2)*	194	838	1,032(4.5)*	
1100 Cleaning Service Workers	5,113(3.9)*	145	402	547(4.0)*	118	870	988(4.3)*	
1400 Personal Service Workers	1,924(1.5)*	59	219	278(2.0)*	120	290	410(1.8)*	
1500 Protective Service Workers	8,616(6.5)*	462	311	773(5.6)*	26	45	71(0.3)*	
TOTALS	44,227(33.3)*	1,504	4,285	5,789(41.9)*	2,509	6,699	9,208(39.9)*	
GRAND TOTALS for all entry level jobs	132,736	3,545	10,270	13,815	10,090	12,986	23,076	

* Percent of GRAND TOTALS

Table D

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

Entry Level Jobs—Data gathered from interviews and mailings involving 1,142 businesses in Metropolitan Nashville and surrounding counties.

Ranked according to number of additional entry level employees needed in next 3 years

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1800 Clerical and Kindred Workers	36,304(27.4)*	1,285	1,676	2,961(21.4)*	1,098	2,409	3,507(15.2)*	1
1700 Sales Workers	5,523(4.2)*	41	682	723(5.2)*	495	518	1,013(4.4)*	2
TOTALS	41,827(31.5)*	1,326	2,358	3,684(26.7)*	1,593	2,927	4,520(19.6)*	
GRAND TOTALS for all entry level jobs	132,736	3,545	10,270	13,815	10,090	12,986	23,076	

* Percent of GRAND TOTALS

Table 1a

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE I

Entry Level Jobs—Data gathered from interviews with 516 manufacturers in Metropolitan Nashville and surrounding counties that had 10 or more employees.
Source: Tennessee Directory of Manufacturers

Ranked according to number of additional entry level employees needed in next 3 years

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0200 Metal Crafts Workers, Except Mechanics	2,760(5.9)*	50	231	281(6.6)*	498	129	627(6.8)*	1
0400 Printing Trade Crafts Workers	3,561(7.6)*	20	189	209(4.9)*	316	174	490(5.3)*	2
0600 Other Crafts and Kindred Workers	1,603(3.4)*	6	74	90(1.9)*	165	66	231(2.5)*	3
0100 Construction Crafts Workers	1,174(2.5)*	32	139	171(4.0)*	152	46	198(2.1)*	4
0300 Mechanics, Repairers & Installers	1,377(2.9)*	37	66	103(2.4)*	109	65	174(1.9)*	5
0500 Transportation & Public Utility Crafts	16(0.0)*	0	3	3(0.1)*	0	3	3(0.0)*	6
TOTALS	10,491(22.3)*	145	702	847(19.8)*	1,240	483	1,723(18.6)*	
GRAND TOTALS for all entry level jobs in Phase I**	47,035	570	3,708	4,278	5,684	3,564	9,248	

See Table 1d for notes

Table 1b

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE I

Entry Level Jobs—Data gathered from interviews with 516 manufacturers in Metropolitan Nashville and surrounding counties that had 10 or more employees.
Source: Tennessee Directory of Manufacturers

Ranked according to number of additional entry level employees needed in next 3 years

OPERATIVES OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0900 Other Operatives, Except Transport	14,401(30.6)*	117	1,237	1,354(31.7)*	2,389	1,300	3,689(39.9)*	1
0800 Semiskilled Packing & Inspecting Operators	3,201(6.8)*	30	343	373(8.7)*	518	268	786(8.5)*	2
0700 Semiskilled Metal Working	4,377(9.3)*	82	267	349(8.2)*	434	258	692(7.5)*	3
1000 Transport Equipment Operatives	2,689(5.7)*	63	175	238(5.6)*	188	210	398(4.3)*	4
TOTALS	24,668(52.5)*	292	2,022	2,314(54.1)*	3,529	2,036	5,565(60.2)*	
GRAND TOTALS for all entry level jobs in Phase I**	47,035	570	3,708	4,278	5,684	3,564	9,248	

See Table 1d for notes

Table 1c

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE I

Entry Level Jobs—Data gathered from interviews with 516 manufacturers in Metropolitan Nashville and surrounding counties that had 10 or more employees.
Source: Tennessee Directory of Manufacturers

Ranked according to number of additional entry level employees needed in next 3 years

SERVICE OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1600 Laborers	3,760(8.0)*	38	443	481(11.2)*	431	399	830(9.0)*	1
1100 Cleaning Service Workers	790(1.7)*	14	62	76(1.8)*	38	62	100(1.1)*	2
1200 Food Service Workers	255(0.5)*	0	23	23(0.5)*	8	23	31(0.3)*	3
1400 Personal Service Workers	17(0.0)*	1	18	19(0.4)*	17	0	17(0.2)*	4
1500 Protective Service Workers	206(0.4)*	2	19	21(0.5)*	11	0	11(0.1)*	5
1300 Health Service Workers	83(0.2)*	1	1	2(0.1)*	1	1	2(0.0)*	6
TOTALS	5,111(10.9)*	56	566	622(14.5)*	506	485	991(10.7)*	
GRAND TOTALS for all entry level jobs in Phase I**	47,035	570	3,708	4,278	5,684	3,564	9,248	

See Table 1d for notes

Table 1d

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE I

Entry Level Jobs—Data gathered from interviews with 516 manufacturers in Metropolitan Nashville and surrounding counties that had 10 or more employees.
Source: Tennessee Directory of Manufacturers

Ranked according to number of additional entry level employees needed in next 3 years

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1800 Clerical and Kindred Workers	5,660(12.0)*	61	339	400(9.4)*	338	481	819(8.9)*	1
1700 Sales Workers	1,105(2.4)*	16	79	95(2.2)*	71	79	150(1.6)*	2
TOTALS	6,765(14.4)*	77	418	495(11.6)*	409	560	969(10.5)*	
GRAND TOTALS for all entry level jobs in Phase I**	47,035	570	3,708	4,278	5,684	3,564	9,248	

* Percent of GRAND TOTALS

** Grand totals for the four Phases exceed the Grand Totals for the total survey since 32 businesses participated in more than one Phase; total survey numbers were discounted (not repeated) for businesses participating in more than one Phase.

Table 2a

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE II

Entry Level Jobs—Data gathered from interviews with the 49 largest employers (500 or more employees)
in Metropolitan Nashville and surrounding counties.
Source: Metro Nashville Chamber of Commerce

Ranked according to number of additional entry level employees needed in next 3 years

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0400 Printing Trade Crafts Workers	1,818(2.4)*	20	46	66(1.0)*	79	62	141(2.0)*	1
0300 Mechanics, Repairers and Installers	2,243(2.9)*	84	54	138(2.0)*	32	64	96(1.3)*	2
0100 Construction Crafts Workers	1,852(2.4)*	57	169	226(3.3)*	18	63	81(1.1)*	3
0600 Other Crafts and Kindred Workers	373(0.5)*	6	14	20(0.3)*	6	18	24(0.3)*	4
0200 Metal Crafts Workers, Except Mechanics	645(0.8)*	0	20	20(0.3)*	3	5	8(0.1)*	5
0500 Transportation & Public Utility Crafts	890(1.2)*	8	9	17(0.2)*	1	2	3(0.0)*	6
TOTALS	7,821(10.1)*	175	312	487(7.0)*	139	214	353(4.9)*	
GRAND TOTALS for all entry level jobs in Phase II**	77,306	2,654	4,287	6,941	2,214	5,012	7,226	

See Table 2d for notes

Table 2b

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE II

Entry Level Jobs—Data gathered from interviews with the 49 largest employers (500 or more employees)
in Metropolitan Nashville and surrounding counties.
Source: Metro Nashville Chamber of Commerce

Ranked according to number of additional entry level employees needed in next 3 years

OPERATIVES OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0900 Other Operatives, Except Transport	5,610(7.3)*	61	421	482(6.9)*	595	55	650(9.0)*	1
1000 Transport Equipment Operatives	1,335(1.7)*	32	93	125(1.8)*	53	75	128(1.8)*	2
0800 Semiskilled Packing & Inspecting Operators	876(1.1)*	0	155	155(2.2)*	74	42	116(1.6)*	3
0700 Semiskilled Metal Working	445(0.6)*	0	29	29(0.4)*	30	12	42(0.6)*	4
TOTALS	8,266(10.7)*	93	698	791(11.4)*	752	184	936(13.0)*	
GRAND TOTALS for all entry level jobs in Phase II**	77,306	2,654	4,287	6,941	2,214	5,012	7,226	

See Table 2d for notes

Table 2c

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE II

Entry Level Jobs—Data gathered from interviews with the 49 largest employers (500 or more employees)
in Metropolitan Nashville and surrounding counties.
Source: Metro Nashville Chamber of Commerce

Ranked according to number of additional entry level employees needed in next 3 years

SERVICE OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1200 Food Service Workers	6,520(8.4)*	135	839	974(14.0)*	705	1,704	2,409(33.3)*	1
1100 Cleaning Service Workers	3,294(4.3)*	107	205	312(4.5)*	3	308	311(4.3)*	2
1300 Health Service Workers	7,731(10.0)*	281	146	427(6.2)*	0	267	267(3.7)*	3
1600 Laborers	3,663(4.7)*	216	216	432(6.2)*	75	161	236(3.3)*	4
1400 Personal Service Workers	1,153(1.5)*	40	148	188(2.7)*	0	210	210(2.9)*	5
1500 Protective Service Workers	8,271(10.7)*	459	294	753(10.9)*	4	23	27(0.4)*	6
TOTALS	30,632(39.6)*	1,238	1,848	3,086(44.5)*	787	2,673	3,460(47.9)*	
GRAND TOTALS for all entry level jobs in Phase II**	77,306	2,654	4,287	6,941	2,214	5,012	7,226	

See Table 2d for notes

Table 2d

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE II

Entry Level Jobs—Data gathered from interviews with the 49 largest employers (500 or more employees) in Metropolitan Nashville and surrounding counties.
Source: Metro Nashville Chamber of Commerce

Ranked according to number of additional entry level employees needed in next 3 years

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1800 Clerical and Kindred Workers	28,135(36.4)*	1,145	1,024	2,169(31.3)*	462	1,756	2,218(30.7)*	1
1700 Sales Workers	2,452(3.2)*	3	405	408(5.9)*	74	185	259(3.6)*	2
TOTALS	30,587(39.6)*	1,148	1,429	2,577(37.1)*	586	1,941	2,477(34.3)*	
GRAND TOTALS for all entry level jobs in Phase II**	77,306	2,654	4,287	6,941	2,214	5,012	7,226	

* Percent of GRAND TOTALS

** Grand totals for the four Phases exceed the Grand Totals for the total survey since 32 businesses participated in more than one Phase; total survey numbers were discounted (not repeated) for businesses participating in more than one Phase.

Table 3a

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE III

Entry Level Jobs—Data gathered from interviews with 376 randomly selected businesses.
Source: Nashville Business Directory

Ranked according to number of additional entry level employees needed in next 3 years

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0100 Construction Crafts Workers	978(9.0)*	0	72	72(4.3)*	201	134	335(9.3)*	1
0600 Other Crafts & Kindred Workers	293(2.7)*	2	54	56(3.3)*	85	18	103(2.9)*	2
0300 Mechanics, Repairers & Installers	713(6.5)*	3	44	47(2.8)*	50	51	101(2.8)*	3
0500 Transportation & Public Utility Crafts	15(0.1)*	0	0	0(0.0)*	50	0	50(1.4)*	4
0200 Metal Crafts Workers, Except Mechanics	167(1.5)*	0	11	11(0.7)*	15	2	17(0.5)*	5.5
0400 Printing Trade Crafts Workers	69(0.6)*	0	33	33(2.0)*	16	1	17(0.5)*	5.5
TOTALS	2,235(20.5)*	5	214	219(13.0)*	417	206	623(17.4)*	
GRAND TOTALS for all entry level jobs in Phase III**	10,908	91	1,599	1,690	1,325	2,266	3,591	

See Table 3d for notes

Table 3b

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE III

Entry Level Jobs—Data gathered from interviews with 376 randomly selected businesses.
Source: Nashville Business Directory

Ranked according to number of additional entry level employees needed in next 3 years

OPERATIVES OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1000 Transport Equipment Operatives	551(5.1)*	5	30	35(2.1)*	55	24	79(2.2)*	1
0900 Other Operatives, Except Transport	248(2.3)*	1	16	17(1.0)*	12	53	65(1.8)*	2
0800 Semiskilled Packing and Inspecting Operators	54(0.5)*	0	11	11(0.7)*	2	8	10(0.3)*	3
0700 Semiskilled Metal Working	22(0.2)*	0	2	2(0.1)*	5	0	5(0.1)*	4
TOTALS	875(8.0)*	6	59	65(3.9)*	74	85	159(4.4)*	
GRAND TOTALS for all entry level jobs in Phase III**	10,908	91	1,599	1,690	1,325	2,266	3,591	

See Table 3d for notes

Table 3c

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE III

Entry Level Jobs—Data gathered from interviews with 376 randomly selected businesses.
Source: Nashville Business Directory

Ranked according to number of additional entry level employees needed in next 3 years

SERVICE OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1200 Food Service Workers	1,390(12.7)*	19	546	565(33.4)*	342	792	1,134(31.6)*	1
1600 Laborers	914(8.4)*	2	118	120(7.1)*	94	97	191(5.3)*	2
1100 Cleaning Service Workers	429(3.9)*	3	40	43(2.5)*	24	69	93(2.6)*	3
1500 Protective Service Workers	162(1.5)*	0	7	7(0.4)*	0	20	20(0.6)*	4
1300 Health Service Workers	185(1.7)*	2	9	11(0.7)*	0	12	12(0.3)*	5
1400 Personal Service Workers	180(1.7)*	2	6	8(0.5)*	4	2	6(0.2)*	6
TOTALS	3,260(29.9)*	28	726	754(44.6)*	464	992	1,456(40.6)*	
GRAND TOTALS for all entry level jobs in Phase III**	10,908	91	1,599	1,690	1,325	2,266	3,591	

See Table 3d for notes

Table 3d

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE III

Entry Level Jobs—Data gathered from interviews with 376 randomly selected businesses.
Source: Nashville Business Directory

Ranked according to number of additional entry level employees needed in next 3 years

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1800 Clerical and Kindred Workers	3,177(29.1)*	40	441	481(28.5)*	232	750	982(27.4)*	1
1700 Sales Workers	1,361(12.5)*	12	159	171(10.1)*	138	233	371(10.3)*	2
TOTALS	4,538(41.6)*	52	600	652(38.6)*	370	983	1,353(37.7)*	
GRAND TOTALS for all entry level jobs in Phase III**	10,908	91	1,599	1,690	1,325	2,266	3,591	

* Percent of GRAND TOTALS

** Grand totals for the four Phases exceed the Grand Totals for the total survey since 32 businesses participated in more than one Phase; total survey numbers were discounted (not repeated) for businesses participating in more than one Phase.

Table 4a

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE IV

Entry Level Jobs—Data gathered from interviews and mailings involving 233 businesses and organizations related directly to Metro School's vocational program offerings.
Sources: Nashville Area Business Associations
Nashville Business Directory
Business Information Directory

Ranked according to number of additional entry level employees needed in next 3 years

CRAFTS AND KINDRED OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
0100 Construction Crafts Workers	989(8.1)*	21	216	237(10.7)*	559	210	769(14.2)*	1
0300 Mechanics, Repairers & Installers	164(1.4)*	9	23	32(1.5)*	37	17	54(1.0)*	2
0200 Metal Crafts Workers, Except Mechanics	76(0.6)*	0	17	17(0.8)*	26	8	34(0.6)*	3
0600 Other Crafts and Kindred Workers	150(1.2)*	2	2	4(0.2)*	3	4	7(0.1)*	4
0400 Printing Trade Crafts Workers	95(0.8)*	0	2	2(0.1)*	2	0	2(0.0)*	5
0500 Transportation & Public Utility Crafts	0(0.0)*	0	0	0(0.0)*	0	0	0(0.0)*	6
TOTALS	1,474(12.1)*	32	260	292(13.2)*	627	239	866(16.0)*	
GRAND TOTALS for all entry level jobs in Phase IV**	12,151	328	1,885	2,213	1,810	3,596	5,406	

Table 4b

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE IV

Entry Level Jobs—Data gathered from interviews and mailings involving 233 businesses and organizations related directly to Metro School's vocational program offerings.
Sources: Nashville Area Business Associations
Nashville Business Directory
Business Information Directory

Ranked according to number of additional entry level employees needed in next 3 years

OPERATIVES OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1000 Transport Equipment Operatives	480(4.0)*	4	54	58(2.6)*	33	130	163(3.0)*	1
0900 Other Operatives, Except Transport	231(1.9)*	5	18	23(1.0)*	0	27	27(0.5)*	2
0800 Semiskilled Packing & Inspecting Operators	83(0.7)*	0	1	1(0.1)*	9	8	17(0.3)*	3
0700 Semiskilled Metal Workers	11(0.1)*	0	6	6(0.3)*	3	1	4(0.1)*	4
TOTALS	805(6.6)*	9	79	88(4.0)*	45	166	211(3.9)*	
GRAND TOTALS for all entry level jobs in Phase IV**	12,151	328	1,885	2,213	1,810	3,596	5,406	

See Table 4d for notes

Table 4c

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE IV

Entry Level Jobs—Data gathered from interviews and mailings involving 233 businesses and organizations related directly to Metro School's vocational program offerings.
Sources: Nashville Area Business Associations
Nashville Business Directory
Business Information Directory

Ranked according to number of additional entry level employees needed in next 3 years

SERVICE OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1200 Food Service Workers	2,853(23.5)*	72	549	621(28.1)*	285	1,426	1,711(31.7)*	1
1300 Health Service Workers	1,672(13.8)*	81	340	421(19.0)*	193	559	752(13.9)*	2
1100 Cleaning Service Workers	926(7.6)*	21	132	153(6.9)*	53	492	545(10.1)*	3
1600 Laborers	464(3.8)*	1	170	171(7.7)*	136	202	338(6.3)*	4
1400 Personal Service Workers	609(5.0)*	18	51	69(3.1)*	99	78	177(3.3)*	5
1500 Protective Service Workers	112(0.9)*	1	7	8(0.4)*	11	17	28(0.5)*	6
TOTALS	6,636(54.6)*	194	1,249	1,443(65.2)*	777	2,774	3,551(65.7)*	
GRAND TOTALS for all entry level jobs in Phase IV	12,151	328	1,885	2,213	1,810	3,596	5,406	

See Table 4d for notes

Table 4d

Metropolitan Nashville/Davidson County Employment and Training Needs Survey

MAJOR OCCUPATIONAL GROUPS WITHIN A BROAD OCCUPATIONAL CATEGORY

PHASE IV

Entry Level Jobs—Data gathered from interviews and mailings involving 233 businesses and organizations related directly to Metro School's vocational program offerings.
Sources: Nashville Area Business Associations
Nashville Business Directory
Business Information Directory

Ranked according to number of additional entry level employees needed in next 3 years

SALES AND CLERICAL OCCUPATIONS (Entry Level)	1. Number Now Employed	2. Number Vacancies			3. Estimated number needed in next 3 years			Rank of total need, next 3 yrs.
		Current	Projected Openings in 1 yr.	Total	Expansion	Replacement	Total	
1800 Clerical and Kindred Workers	2,495(20.5)*	83	230	313(14.1)*	146	362	508(9.4)*	1
1700 Sales Workers	741(6.1)*	10	67	77(3.5)*	215	55	270(5.0)*	2
TOTALS	3,246(26.6)*	93	297	390(17.6)*	361	417	778(14.4)*	
GRAND TOTALS for all entry level jobs in Phase IV**	12,151	328	1,885	2,213	1,810	3,596	5,406	

* Percent of GRAND TOTALS

** Grand totals for the four Phases exceed the Grand Totals for the total survey since 32 businesses participated in more than one Phase; total survey numbers were discounted (not repeated) for businesses participating in more than one Phase.

Table E

METROPOLITAN NASHVILLE PUBLIC SCHOOLS
Vocational Education Exemplary Project

EMPLOYMENT AND TRAINING NEEDS SURVEY

JOBS WITH THE MOST PROJECTED OPENINGS, 1982-1985

Top 100 out of 651 entry level job titles
(30 or more job openings)

Results from interviews and mailings involving 1,142 Nashville area businesses

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100)	Number Employed 1982'	Projected Employment Needs 1982-1985 Expansion'	 Replacement'	 Total Openings'
CRAFTS AND KINDRED OCCUPATIONS				
1) Construction Crafts Workers				
Electricians	1,047	344 *	134	478 **
Carpenters	812	271 *	120	391 **
Other Construction Craft Workers	542	68	53	121
Painters, Construction & Maintenance	338	42	24	66
Plumbers & Pipe Fitters	555	51	14	65
Insulation Installers	15	25 *	10	35 **
Drywall Finishers	5	10 *	20	30 **
Drywall Framers & Hangers	46	10 *	20	30 **
Excavating & Grading Machine Operators	318	29	1	30
2) Metal Crafts Workers, Except Mechanics				
Machinists	1,000	124	43	167
Sheetmetal Workers & Tinsmiths	690	105	21	126
Tool & Die Makers	474	90	22	112
Press Operators	34	102 *	0	102 **
Other Metal Crafts Workers	236	27	14	41
Job & Die Setters, Metal	226	27	11	38
Millwrights	313	13	20	33
3) Mechanics, Repairers & Installers				
Other Mechanics, Repairers & Installers	1,277	67	51	118
Heavy Equipment Mechanics, including Diesel/Aircraft	401	57	17	74
Air Conditioning/Heating Repairers & Installers	264	32	17	49
Automobile Mechanics	718	9	24	33
Appliance Parts Repairers & Installers	25	0	30	30 **
4) Printing Trade Crafts Workers				
Printing Press Operators	1,104	88	71	159
Binders	692	89	52	141
Compositors & Typesetters	254	35	16	51
Other Printing Crafts Work	961	28	19	47
Photoengravers/Lithographers	224	32	7	39

Notes appear at the end of the table

Table E continued:

Entry Level Jobs

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100)	Number Employed 1982'	Projected Employment Needs 1982-1985		
		Expansion'	Replacement'	Total Openings'
CRAFTS AND KINDRED OCCUPATIONS continued:				
5) Transportation and Public Utility Crafts				
Telephone Installers and Repairers	826	51	2	53
6) Other Crafts and Kindred Workers				
Architectural Draftspersons	60	70 *	10	80 **
Other Crafts and Kindred Workers	514	54	3	57
Inspectors, Other	582	38	15	53
OPERATIVES OCCUPATIONS				
7) Semiskilled Metal Working				
Welders & Flame Cutters	965	129	57	186
Punch & Stamping Press Operatives	622	66	91	157
Other Semiskilled Metalworking Operators	1,006	71	62	133
Grinding Machine Operatives	384	51	27	78
Drill Press Operatives	315	67	10	77
8) Semiskilled Packing and Inspecting Operators				
Packers & Wrappers, Except Meat & Produce	1,605	187	123	310
Other Semiskilled Packing & Inspecting Operatives	483	180 *	117	297 **
Checkers, Examiners & Related Manufacturing	996	160	39	199
9) Other Operatives, Except Transport				
Assemblers	5,683	1,365 *	337	1,702
Sewing Machine Operatives	1,214	11	670	681 **
Aircraft Assemblers	700	350 *	0	350 **
Other Operatives	2,307	194	53	247
Other Machine Operatives	2,260	72	173	245
Electronic Assemblers	488	84	20	104
Cutting Operatives, Other	498	80	4	84
Painters, Manufactured Art	288	61 *	12	73
In-plant Production Workers	115	63 *	0	63 **
Garage Workers & Gas Station Attendants	64	7	33	40 **
Laundry & Dry Cleaning Operatives, Others	276	3	27	30
10)Transport Equipment Operatives				
Truck Drivers	1,604	199	212	331
Forklift & Tow Motor Operators	1,337	91	71	162
Delivery & Route Workers	886	73	86	159

able E continued:

ntry Level Jobs

CCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100)	Number Employed 1982'	Projected Employment Needs 1982-1985 Expansion'	 Replacement'	 Total Openings'
ERVICE OCCUPATIONS				
1) Cleaning Service Workers				
Building Interior Cleaners, Others	1,480	45	434	479
Janitors & Sextons	1,803	51	263	314
Lodging Quarters Cleaners, Except Private	526	20	171	191
2) Food Service Workers				
Waiters/Waitresses, Assistants	2,248	409 *	969	1,378 **
Food Counter & Fountain Workers	1,701	413 *	534	947 **
Other Food Service Workers, Except Private	1,511	288	511	739 **
Dishwashers	627	43	438	481 **
Waiters/Waitresses	1,099	74	395	469 **
Non-management/Fast Service Restaurant Workers	820	65	563	628 **
Cooks/Chefs, Except Private Households	1,556	60	354	414
Bartenders	163	3	31	34
3) Health Service Workers				
Nursing Aides, Orderlies & Attendants	2,491	81	456	537
Practical Nurses	2,189	30	274	304
Other Health Workers	4,116	32	20	52
Health Aides, Except Nursing	299	44	4	48
4) Personal Service Workers				
Housekeepers, Except Private Household	348	12	203	215 **
Child Care Workers	357	35	54	89
Hairdressers & Cosmetologists	310	60 *	9	69
5) Protective Service Workers				
Guards	1,054	17	39	56
6) Laborers				
Other Laborers	1,656	262	222	484
Stock Handlers	1,325	170	281	451
Construction Laborers, Other	1,656	172	220	392
Freight & Material Handlers	1,254	64	59	123
ALES AND CLERICAL OCCUPATIONS				
7) Sales Workers				
Sales Clerks & Sales Workers	4,486	327	378	705
Insurance Agents, Brokers & Related	296	96 *	13	109
Telephone Sales Workers	49	1	75	76 **
Real Estate Agents & Brokers	168	37 *	6	43
Advertising Sales Workers	87	14	27	41 **

BEST COPY AVAILABLE

Table E continued:

Entry Level Jobs

OCCUPATIONAL CATEGORIES (N=4) Occupational Groups (N=18) Job Titles (N=100)	Number Employed 1982'	Projected Employment Needs 1982- 1985		
		Expansion'	Replacement'	Total Openings'
SALES AND CLERICAL OCCUPATIONS continued:				
18) Clerical and Kindred Workers				
Other Clerical Workers	3,095	123	554	677
Secretaries & Stenographers	6,988	174	400	574
Cashiers	2,473	210	134	344
Computer & Peripheral Equipment Operators	1,776	120	112	232
Bank Tellers	289	5	201	206 **
Typist/Word Processors	2,459	46	109	155
Keypunch Operators	705	35	108	143
Bookkeepers	1,465	91	51	142
File Clerks	698	30	85	115
Receptionists	619	34	79	113
Shipping & Receiving Clerks	816	53	38	91
Statistical Clerks	554	4	81	85
Other Office Machine Operators	195	2	64	66
Clerical Supervisors	709	29	36	65
Payroll & Timekeeping Clerks	480	19	37	56
Stock Clerks & Storekeepers	826	12	40	52
Other Secretarial Workers	376	10	38	48
Accounting Clerks	1,668	12	32	44
Telephone Operators	1,280	7	34	41
Counter Clerks, Except Food	106	7	32	39
Desk Clerks	195	10	21	31
TOTALS for top 100 job titles	102,602	9,370	12,374	21,744
TOTALS for all 651 job titles	132,736	10,090	12,986	23,076

' Actual numbers reported or projected by 1,142 businesses
"Total Openings", reflect projected number to be hired between 1982-85, not the total number expected to be employed in 1985.

* Projected expansion compared to number employed in 1982 (growth rate) ranked within top 100 (17% or more growth rate) of 651 job titles.
Average growth rate for Survey = 7.6%

** Projected expansion and replacement compared to number employed in 1982 (hiring rate) ranked within top 100 (39% or more hiring rate) of 651 job titles.
Average hiring rate for Survey = 17.4%

APPENDIX D

Tables - Employment Projections, Other Sources

Table F

Projected Employment by Board Occupational Category
Service Delivery Area 9

	Employment		Percent Change	
	1984 Estimated	1990 Projected	Total 1984-1990	Per Year
Occupational Category				
Total All Occupations	316,900	349,320	10.2	1.7
Professional, Technical and Kindred	50,880	55,390	8.9	1.5
Managers & Officials	30,570	33,930	11.0	1.8
Sales Workers	22,510	24,730	9.8	1.6
Clerical Workers	62,760	70,220	11.9	2.0
Crafts and Kindred Workers	35,620	38,550	8.2	1.4
Operatives	42,690	46,060	7.9	1.3
Service Workers	45,830	52,330	14.2	2.4
Laborers, Except Farm	20,980	22,930	9.3	1.6

Table XI-Extracted from 1985 Annual Planning Information, Tennessee Department of Employment Security, Research and Statistics Division

Occupational projections for Nashville/Davidson County

Table G

THIRTY HIGH-DEMAND OCCUPATIONS
(Occupations with 3,000 or more openings during 1984-1990)

Occupations	Total Openings 1984-1990	Openings Due to Growth	Openings Due to Replacement	Annual Average Openings
Farmers (Owners & Tenants)	32,840	2,590	30,250	5,470
Sales Clerks	18,160	4,990	13,170	3,030
Secretaries	14,490	4,840	10,100	2,490
Janitors, Porters, & Cleaners	13,640	2,510	11,130	2,270
Nurses Aides/Orderlies	12,180	6,200	5,980	2,030
General Clerks, Office	12,070	3,740	8,330	2,010
Cashier	11,960	4,380	7,580	1,990
Food Preparation & Service Workers-Fast Food	11,390	5,090	6,300	1,900
Waiters or Waitresses	10,280	4,800	5,480	1,710
Sales Reps., Agents, Non-Technical	10,050	3,230	6,820	1,680
Nurses, Professional	7,870	3,180	4,690	1,310
Guards & Doorkeepers	7,670	1,200	6,470	1,280
Bookkeepers, Hand	7,180	2,370	4,810	1,200
Maids	6,860	2,740	4,120	1,140
Licenses Practical Nurses	6,390	3,120	3,270	1,060
Elementary School Teachers	5,870	- 1,000	6,870	980
Managers, Store	5,660	1,570	4,090	940
Sales Reps., Agents, Technical	4,910	1,610	3,300	820
Stock Clerks	4,800	1,910	2,890	800
Typists	4,780	1,380	3,400	800
Office Machine Operators	4,720	2,130	2,590	790
Carpenters	4,700	- 190	4,890	780
Truck Drivers	4,570	1,810	2,760	760
Delivery & Route Workers	4,380	1,830	2,550	730
Sales Reps., Agents, Associates	4,360	1,140	3,220	730
Automotive Mechanics	4,340	1,940	2,400	720
Accountants & Auditors	4,320	1,760	2,560	720
Accounting Clerks	4,260	1,320	2,940	710
Child Care Workers	4,130	880	3,250	690
Maintenance Repairers, General Utility	4,090	1,940	2,150	680

Table 3-Extracted from Tennessee Employment Projections 1984-1990. Statewide, Tennessee Department of Employment Security, Research and Statistics Division

Occupational projections for Tennessee

Table H

FORTY OCCUPATIONS HAVING THE LARGEST PROJECTED EMPLOYMENT GROWTH*
1982-95

Building Custodian
Cashier
Secretary
General Office Clerk
Sales Clerk
Registered Nurse
Waiter and Waitress
Kindergarten and Elementary School Teacher
Truck Driver
Nursing Aide and Orderly
Technical Sales Representative
Accountant and Auditor
Automotive Mechanic
Supervisor of Blue-Collar Workers
Kitchen Helper
Guard and Doorkeeper
Food Preparation and Service Worker in Fast-Food Restaurants
Store Manager
Carpenter
Electrical and Electronics Technician
Licensed Prectical Nurse
Computer Systems Analyst
Electrical Engineer
Computer Programmer
General Utility Maintenance Repairer
Trades Helper
Receptionist
Electrician
Physician
Clerical Supervisor
Computer Operator
Nontechnical Sales Representative
Lawyer
Stockroom and Warehouse Stock Clerk
Typist
Delivery and Route Worker
Hand Bookkeeper
Restaurant Cook
Bank Teller
Short-Order Cook, Specialty and Fast-Food

* Developed by U.S. Bureau of Labor Statistics

Occupational projections for United States

Table I

TWENTY OCCUPATIONS WITH THE HIGHEST PROJECTED GROWTH RATE*
1982-95

Computer Service Technician
Legal Assistant
Computer Systems Analyst
Computer Programmer
Computer Operator
Office Machine Repairer
Physical Therapy Assistant
Electrical Engineer
Civil Engineering Technician
Peripheral EDP Equipment Operator
Medical Insurance Clerk
Electrical and Electronics Technician
Occupational Therapist
Surveyor Helper
Banking and Insurance Credit Clerk
Physical Therapist
Employment Interviewer
Mechanical Engineer
Mechanical Engineering Technician
Plastics Compression and Injection
    Mold Machine Operator

* Developed by U.S. Bureau of Labor Statistics

Occupational projections for United States

Table J

TWENTY OCCUPATIONS WITH THE LARGEST PROJECTED RATE OF DECLINE*
1982-95

Railroad Conductor
Shoemaking Machine Operative
Aircraft Structure Assembler
Central Telephone Office Operator
Taxi Driver
Postal Clerk
Private Household Worker
Farm Laborer
College and University Faculty Member
Roustabout
Postmaster and Mail Superintendant
Rotary Drill Operator Helper
Graduate Assistant
Data Entry Operator
Railroad Brake Operator
Faller and Bucker
Stenographer
Farm Owner and Tenant
Typesetter and Compositor
Butcher and Meatcutter

---

* Developed by U.S. Bureau of Labor Statistics

Occupational projections for United States